

THE AMERICAN REVIEW OF REVIEWS

EDITED BY ALBERT SHAW

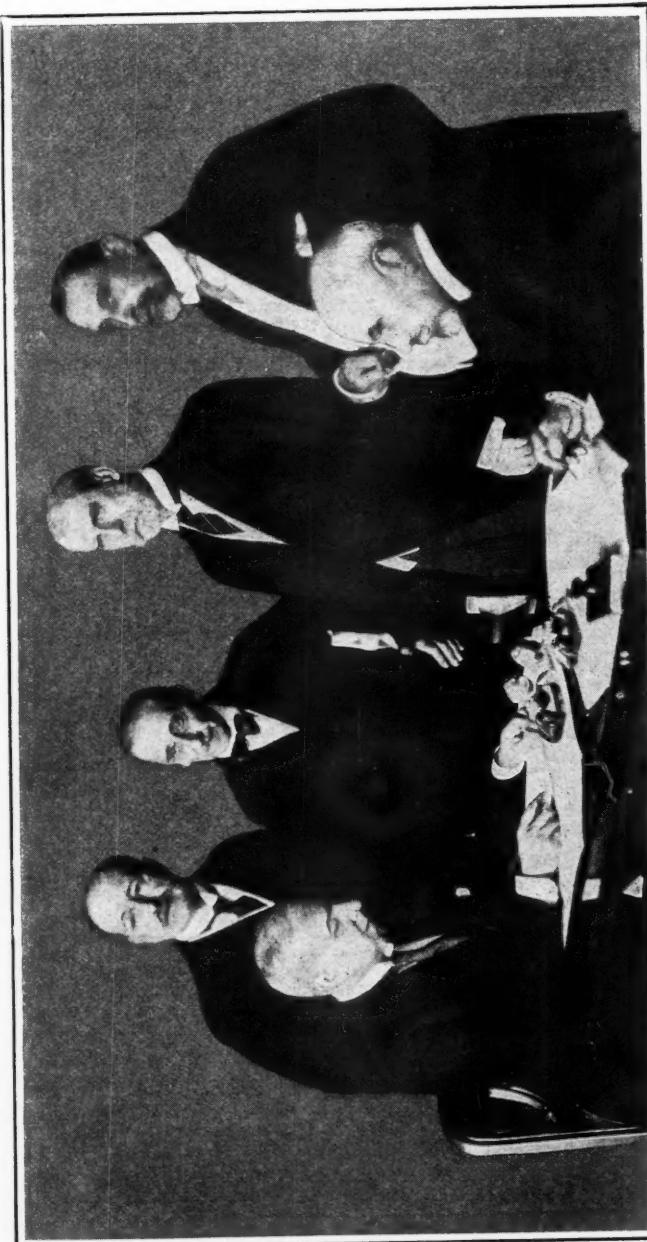
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SIGNING OF THE TACNA-ARICA ARBITRATION PROTOCOL BETWEEN CHILE AND PERU ON JULY 21

[Peru is represented by Dr. M. F. Porras (seated left) and Chile by Señor Carlos Aldunate (seated right). Standing directly behind the table, left to right: Hernan Velarde (Peru); Ambassador Mathieu of Chile, Secretary of State Hughes and Ambassador Pezet, of Peru. For thirty years the Tacna-Arica boundary dispute between Chile and Peru has been a source of friction in South America. On May 15 last a conference between representatives of the two nations met at Washington, on the invitation of President Harding, and in July the Peruvian proposal was accepted by Chile. The terms of this proposal, as finally modified, were: (1) To submit to arbitration the question whether a plebiscite to determine ownership of the disputed provinces should be held or not; (2) in the event of an affirmative decision by the arbitrator, the conditions of the plebiscite to be fixed by him; (3) if the decision is against the plebiscite, the Chilean and Peruvian Governments to call another conference for the purpose of deciding how Article III of the Treaty of Ancon shall be fulfilled. The first stage of the negotiations is concluded by the signing of the protocol. After its ratification by both Chile and Peru special commissioners will come again to Washington to present the case for each country. It is believed that no decision can be reached before Secretary Hughes' return from the Brazil Centenary.]

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THE PROGRESS OF THE WORLD

Climate and the Political Barometer

weather in political and economic fields. There will be fluctuations in the social barometer, and periods of storm will succeed periods that are bright and fair. But, though stormy days may be inevitable, it is exceedingly important that democratic societies, like those of the English-speaking countries, should learn how to protect themselves against devastation and catastrophe. Speaking in the ordinary physical sense, we have learned in our part of the north temperate zone, occupied by the American people, how to build our houses for permanence; how to guard human life against cold and heat and epidemic disease; how to conserve the soil and produce crops; how to divert floods and construct bridges—in short, we use accumulated experience and applied science to adapt ourselves to the climatic conditions under which we find ourselves living. When we had relatively few people in the country, and life was far simpler than it is to-day, the ordinary household thought itself much more concerned with the problems arising out of the direct struggle with nature in her various moods, and with the need of facing the adaptations required by summer heat and winter cold, than with the problems growing out of the political and economic relationships of the State or the nation.

The Transition from Wood to Coal and Oil But we are living under conditions that signify profound change when compared with the facts of half a century ago. Thus, until a recent time, the principal fuel of the people of the United States was wood. Cities and towns were small, and the great majority of Americans lived either in the country or in communities that were in close contact

with rural life and conditions. Even railroad trains in the United States were largely operated by wood-burning locomotives. There are many thousands of men and women, still active and vigorous, who remember the days when passenger trains were stopped while locomotive tenders were replenished from wood-piles adjacent to the tracks. In most American homes the wood-burning cook stove in ample kitchens served a single purpose in summer and a double purpose in winter. Firewood was so abundant that it had little value beyond the labor cost of cutting and hauling. With the rapid disappearance of our forests, the wood supply has become scarce except in particular districts. We have become a nation of great industries, requiring an immense supply of a concentrated fuel like coal or crude oil to furnish power. The railroads of our time are in like manner dependent for their operation upon many millions of tons per annum of steam-making coal.

Growth of Public Control At an earlier period, labor troubles in coal mines, although sometimes disastrous to the well-being of a particular region, were not likely to assume national importance. In those old days, even in the towns and cities, people in general pumped their drinking-water from wells. They were not dependent upon a common supply. Water for domestic purposes was one of those private affairs like the winter's wood-pile, or the seasonable potato-bin, or the prevalent pork-barrel. But, nowadays, decidedly more than half of the hundred million people in the United States are dependent for daily comfort and health upon the safe operation of public water-works, with quantity and quality both duly safeguarded. Labor troubles that might result in dynamiting an aqueduct or in contami-

nating the sources of public water-supply could not possibly be tolerated. Almost everywhere the element of private profit has disappeared from the business of furnishing water to communities. A service so essential to the general welfare, requiring the constant attention of engineers, chemists, and bacteriologists, emerges as a direct governmental function.

Strikes Not Tolerated in Supply Services Like fire control, protection against epidemics, and other modern branches of administration, the water-supply becomes a public service through an expansion of the police power, just as the lighting of the streets long ago had become a public matter, as later did the service of protection against fire. As regards all these public services, it has become a well-established principle that no set of men for private reasons may conspire together to endanger the public welfare for a single hour. In the early days of water-works the supply was largely in the hands of commercial companies operating, as other public-utility companies do, for profit. There were, however, too many things involved in a good water-supply besides the mere distribution of aqueous fluid through pipes. And so the service was in due time taken over by municipalities, with few exceptions. Nobody nowadays connected with a city's water department would think of organizing a strike and trying to cut off the supply, in order to enforce a demand for higher wages or for a redress of supposed grievances of any kind.

The Police Strike in His-toric Crisis Although these observations seem almost too commonplace to be printed in this year 1922, it is necessary to keep it in mind that simple principles are forgotten sometimes, and have to be learned over again. Thus certain American labor leaders during the war period seemed to forget everything except their opportunity to increase their membership, to enlarge their power with unprecedented rapidity, and to invade many new fields. When they had fully unionized public officials, such as policemen and firemen, their next step would have been to unionize militia companies, and then the regular army and the regular navy. It was not realized what this signified until the country faced the crisis precipitated by the strike of the policemen of the city of Boston,

Massachusetts, in September, 1919. Never had a more clear-cut issue arisen in the history of the United States than was presented by the Boston police strike. If this had been sharply disavowed and promptly rebuked by the chief spokesmen of unionism, the fact of such a strike would have been bad enough, but not so critical. Unfortunately, it was not thus disowned.

A Verdict that Was Accepted Policemen are for ordinary purposes a more vital part of the government of the country and its administration of justice than are the judges of our courts. If policemen may strike, then firemen may fold their arms in the face of a conflagration; or quarantine and health officers may refuse to act when an epidemic threatens the community. Fortunately, the Commonwealth of Massachusetts refused to compromise with the police strike. Public opinion condemned it everywhere. The whole country took notice. "Labor" accepted the verdict, and American governmental employees will not strike, henceforth. No men are obliged to seek admission to the public service as policemen or firemen, unless they so desire. It is the intention of American communities to treat their public servants justly, and to reward fidelity. There is no conceivable excuse for the employment of the strike weapon in any of these forms of employment.

How Sovietism was Approaching If policemen were "organized," with every city's uniformed guardians a local branch of a national union of policemen affiliated with the American Federation of Labor, the



UNCLE SAM TRIES TO SETTLE THE COAL STRIKE BY PERSUADING THE ANTAGONISTS TO "TALK IT OVER"

From the *Star* (Washington, D. C.)

principal danger to the public welfare would not inhere in the possibility of an occasional strike for better pay or for other desired advantages. The danger would lie in the difficulty of maintaining the morale of policemen in the face of their duty to protect the public at some time of disturbance caused by labor troubles in local industries or transportation. Thus, if a strike in railroad shops and terminal yards were attended by violence, and the community was at the same time menaced by a sympathetic strike on the part of a policemen's union, the situation would become intolerable and would have to be corrected by drastic measures on the part of citizens. The same thing is true if militia companies were organized as units in a soldiers' trades union, with the American Federation of Labor at Washington bringing pressure to bear upon the War Department and upon Congress. It does not require very powerful thinking machinery to arrive at the obvious conclusion that under such circumstances the real government of the United States would not be that which is established under the Constitution. There would have been substituted a government by labor leaders, centering in the American Federation with its headquarters at Washington. Before anybody had quite realized it, we should have found ourselves, here in the United States, under a government very much like the Soviet dictatorship in Russia. The American Sovietism at first would, of course, be indirect, while that of Russia makes no pretense of allowing the people to have a popular government. But, in Washington, even as in Moscow, power would have been assumed and held, rather openly and definitely, through the fact of having unionized the army as well as the police forces.

Railroad Service Has Become Vital Those changed conditions in the United States to which we referred in our opening paragraph have made it a vital concern that the public should be supplied with coal and with railroad transportation. The milk supply of New York City, for example, comes from a region much of which is several hundred miles distant. The fuel



GULLIVER UP-TO-DATE

From the *Press* (Cleveland, Ohio)

[This cartoon shows the position in which Uncle Sam would surely have found himself if he had tolerated strikes of policemen, firemen, and other public employees. We must now end coal and railroad strikes as relics of a by-gone age!]

supply comes mostly from the anthracite region of Pennsylvania. Supplies of bread and meat come from the Mississippi Valley as well as from nearer localities. The earning power of the millions of people in New York City is derived, in chief part, from an immense variety of manufacturing interests which require copper from the West, iron and steel from Pittsburgh and Bethlehem, textiles from the South and from New England, and hundreds of other things that are brought to the metropolis by rail. The interest of the people who require continuous service on the railroads, not only for their food and fuel, but for the materials which enter into their work, is now entitled to first consideration when conflicting elements threaten to paralyze railroad transportation.

Recognizing the Public Interest Railroads are in one sense private property as much as are hotels or cotton-mills or farms.

All these things, while private property, are affected by a public interest, the extent of this interest varying according to circumstances. Thus in time of war, farms become a matter of general concern, and the

Government takes the wheat crop at a fixed price because of paramount need. Textile factories, and steel mills, similarly become public instrumentalities in time of emergency. Railroads in war time are so vital that the Government takes complete control and operates them. But at all times—as our economic life has become complex and as our population has grouped itself in commercial and industrial centers—the public interest in railroads is paramount to all private claims. This fact has been increasingly recognized, and railroads have come under public regulation almost to the last detail. The national railroad law (known as the Esch-Cummins Act) of 1920 provided for the restoration of the railroads to their private owners after a period of war-time operation by Government. Realizing the necessity of continuous operation, this national law undertook to provide means for adjusting labor questions that would leave no excuse whatever for strikes or lockouts.

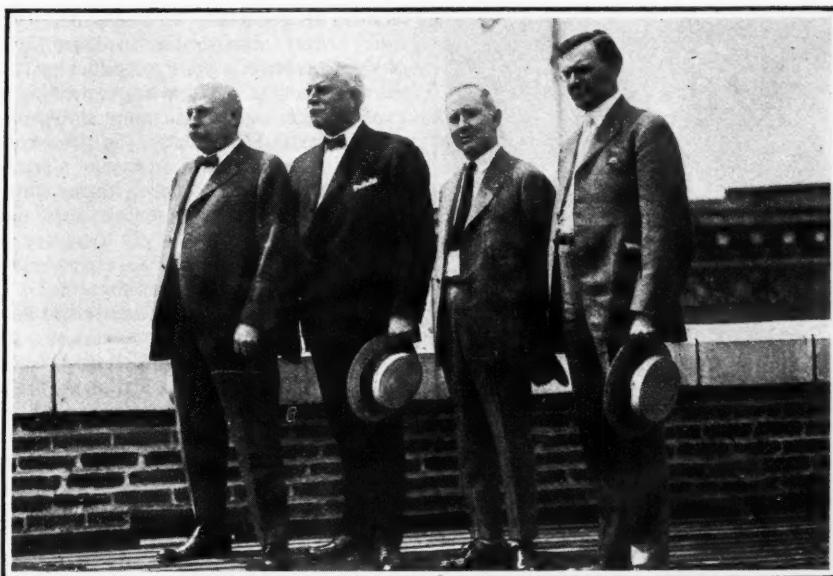
Creating the Labor Board The Act as presented to the Senate contained a clause absolutely prohibiting strikes, while providing fully for the protection of railway employees and the adjustment of their grievances by official arbitration. This was a proper clause, and ought to have been kept in the Act. There would have been no trouble in finding plenty of men who would have been more than glad to work for the railroads under the assurance of the Government that they would never be put in the unhappy position of having labor leaders call them out on strike. There was ample room in hundreds of other employments for turbulent young men who did not care to enter those specified public employments in which the strike is not to be tolerated. It is unfortunate that Congress lacked the courage of Senator Cummins unanswerable logic. However, although Congress did not accept the Cummins plan for settling labor differences, it did actually embody in the law a scheme which rendered strikes wholly needless and morally indefensible. The Interstate Commerce Commission was given increased jurisdiction over all matters relating to rates of charge and to the general operation of the roads, while a new Labor Board was created to deal with disputes that might arise between railway managers and their organized employees.

No Longer any Excuse for Strikes

This system recognized and encouraged labor organization in the most generous way. Seemingly, there could be no valid excuse for a refusal either of managers or of employees to accept the findings of the Labor Board in a given case. It is obvious that it would not be in accordance with American principles to try to enforce contracts of employment by specific performance. If railroad men as individuals or as groups were not satisfied to remain in their positions, there could be no reason under ordinary conditions why they should not pursue their trades or callings in other fields. A strike, technically, is of course an abandonment of one's job, and the striker obviously has no further legal claim upon the position that he has voluntarily given up. Strikes in practice, however, are wholly different from strikes in theory. In practice, a strike is a means by which an organized body of workers undertake so to cripple and harass the operations of the employer as to compel a surrender to their demands.

Railroad Labor in Former Days

In the earlier days of railroad strikes there was no labor leader who claimed that the right to strike ought to be retained as a permanent weapon, in so far as transportation is concerned. The powerful railroad "barons" of a generation ago were opposed to organized labor, and were not willing to provide a reasonable way for the adjustment of grievances. Wages were reduced arbitrarily, and individual men were discharged and blacklisted, without redress. Those who had the capacity to speak for their fellows were treated as ringleaders by railroad executives, and summarily discharged. In those days the workers asked for only one thing: namely, the right to appeal grievances from lower to higher officials, this including the right to appear through representatives, with the further right to impartial arbitration if direct settlement could not be made. The railroad heads held the opinion that there must be firm discipline of a somewhat military character, and that the men must obey rules and accept conditions or "go back to the farm." In due time, however, the country outgrew the primitive conditions which explained such an attitude on the part of railroad executives. The Brotherhood of Locomotive Engineers was tolerated, and its wise direction gained the confidence alike



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LEADERS OF THE FOUR RAILROAD BROTHERHOODS, WHO CONFERRED AT WASHINGTON LAST MONTH ON THE CRISIS CAUSED BY THE STRIKING SHOPMEN

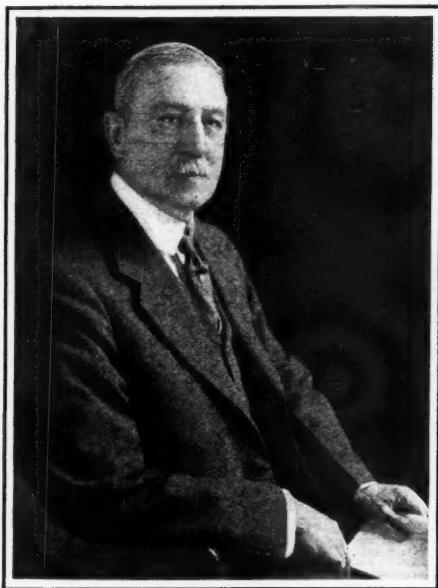
(From left to right, are: L. E. Sheppard, of the conductors' organization; Warren S. Stone, engineers; D. B. Robertson, firemen; and W. N. Doake, representing W. G. Lee, president of the trainmen's union, who is ill)

of employers and of the public. The Brotherhoods of Firemen, Trainmen, and Conductors in due time gained similar approval. These organizations, as a rule, negotiated separately with the particular railroad companies, and the period of transportation strikes seemed to have come to an end. The brotherhoods had obtained the two things which comprised their demands: (1) the right to have their organizations recognized, and (2) the right to arbitration as a final resort. They were fully aware that strikes were only justified when conciliation did not avail, and when arbitration was denied.

The New Railway Unions Gradually the principle of unionization was extended until clerks, station agents, section hands or maintenance men, workers at several trades in repair shops, as well as several other classes, were organized in a series of separate unions. For a long time the railway "Brotherhoods" kept aloof from the American Federation of Labor, but ultimately in the grand unionizing rush of the war period a large number of unions of different kinds of railway workers were swept into a connection with organized labor as a whole. Men who repair locomotives

tives or who paint wooden freight-cars are not railroad men in the same sense as are the locomotive engineers. A painter or a carpenter or a machinist working in railroad shops is no different kind of a workman from a painter or carpenter or machinist who is employed in the same vicinity outside of railroad shops. It is not easy to see any reason why the painter who happens to be painting freight-cars, or the machinist who is repairing a locomotive, should be able to stop the milk supply of a city any more than the machinist who is repairing an automobile in a near-by garage, or the carpenters and painters who are at work on some private house.

"Shopmen" as a Favored Class Nor is there any reason that the public can understand why the wages of shopmen who happen to be working at their trades on railroad jobs ought to be held at a decidedly higher level, by official Labor Boards and Government action, than the wages of their immediate neighbors who are working at the same trades for employers other than railroad companies. Yet for weeks past we have been confronting the serious menace of a railroad tie-up because the Labor Board, after a careful and impartial con-



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MR. T. DEWITT CUYLER

(Chairman of the Association of Railway Executives,
spokesman for the railway officials)

sideration, decided that the war-time pay of shopmen should be somewhat reduced. That these mechanics, even with the reduced scale, were in a better position than equally good mechanics working at the same trades all around them, was not in dispute. It does not seem to have been, on the part of the striking shopmen, a question of rights or of fair play, but rather a question of power. The public must have railroad service. Locomotives and cars must be kept in repair. Every locomotive needs some minor attention after each run, and requires a considerable overhauling several times a year. Freight and passenger cars similarly require constant attention. If the shopmen could make their strike fairly complete, and could use means to prevent other men from taking the places they had deserted, it was the opinion of their leaders that they could force the railroad companies to grant their demands, and could obtain a reversal of the decision of the Labor Board.

Should a Losing Strike Be Rewarded? In spite of the fact that conditions of general employment were improving, the railroads were able to secure a good many new shopmen. The strike was proving less hopeful than its leaders had expected. The men

were at length ready to accept the cut in their wages and return to their former places. A serious point of difficulty, however, had arisen. There are certain advantages, which we need not here elaborate, in what is termed "seniority," in these classes of employment. Thus, in case of a slackening of business, the men of longer employment and therefore of "senior" rank would be less likely to be laid off than new employees. Should strikers be reinstated with these seniority rights unimpaired? The country eagerly desired a cessation of the strike. Other railroad organizations, especially the Big Four Brotherhoods, while not desiring to precipitate a strike that would shut down all railroad operation and create a profound historic crisis, were naturally enough anxious to have the shopmen come out without loss of prestige.

The Brotherhoods Concerned The reason for this is obvious.

In the readjustment of wages following the war expansion, the tendency must be downward. The railroads had been compelled by the Interstate Commerce Commission to reduce freight rates and thus cut down their gross incomes. They had been virtually assured that if they reduced freight rates they might expect the Labor Board to help them reduce their enormous labor costs. Now, if a reduction of shopmen's pay had been acquiesced in without protest, it might have been easier from time to time to obtain from the Labor Board decisions reducing the pay of other railroad workers, including the Brotherhoods. Thus there began to appear, as the case of the striking shopmen grew more hopeless, some tendency on the part of members of the brotherhoods here and there, particularly in the Far West, to find excuse for increasing the public's inconvenience. It was asserted that railway train crews were endangering their lives through operating imperfectly repaired locomotives. Claims were also made that these men were in danger from guards employed by the companies, or from local troops that were maintaining order at certain points.

A Question for Congress

President Harding and the Administration meanwhile were doing their best to find a solution. The Railway Labor Board had told the men emphatically at the beginning of the strike that they could not come back with any claim to seniority rights. There

was no serious point of principle that could be raised against the proposal that the Labor Board should give a rehearing on the question of wage scales. The railroad executives were disposed to stand firmly upon the statement that the Labor Board had made, and upon the promises that they themselves seem to have made to new employees respecting seniority rights. To yield in any way to the strikers in this matter of seniority would be extremely unfortunate if such a concession should become a precedent. If the country has not learned the one essential lesson—that railroad strikes must be abolished, like police strikes—it might be desirable to have this particular contest go further, and cause more inconvenience, in order that an end might be put, once and for all time, to troubles of this kind. The ultimate decision belongs to Congress, and "teeth" should be put into the law.

Labor Has Fully Gained Earlier Demands As we have already remarked,

railway labor had always declared that they were opposed to strikes, in principle, because of the essential nature of transportation service. All that they desired was an admitted right to act collectively in presenting questions of interest, with an impartial tribunal to make final decisions after direct conference had failed. There has now been granted to railroad labor much more in these directions than had been asked in those earlier days. The tendency of leadership to-day is not to seek justice, but to acquire power. The scepter has passed from the railroad presidents to the presidents of the unions. Railroad executives nowadays are hard-working officials who hold their positions by reason of their proved merit. Every man of them has made his own way, and they are a group of men entitled to confidence and respect. On the other hand, at the head of the railway unions we have for the most part men of fine ability, who, like the railroad executives, are good types of American citizenship. The leaders on both sides can understand facts; and the two groups are not deeply antagonistic to each other. The public should compel them to coöperate.

The Time for Firm Decisions The present situation is in many respects a legacy from the past. We should probably have worked out the railroad problem satisfactorily but for the tremendous up-

heavals caused by the war. As things now stand, public opinion should assert itself and take the firm ground that interruption of traffic and travel by reason of labor disputes will not be tolerated. We have gone so far in the regulation of railroads that we must go a little further and regulate the strike out of existence. Every reasonable man wishes to see railway labor well paid, especially because the public safety requires that railroad men should be of a particularly high character. The abolition of strikes must, of course, bear equally upon companies and unions. Men will be more glad than ever to work for railroads, if the conditions of their employment are well protected without the risks that attend so abnormal a proceeding as a strike. Workmen of settled habits, who have families and homes, hate strikes; yet they cannot get along happily in their crafts under existing conditions, if they refuse to associate themselves with their fellows in the unions through which negotiations with management are conducted.

No Advantages in Government Ownership It is to be regretted that law-making bodies are so timid in dealing with labor problems. A majority of legislators do not seem to understand that laboring men themselves are the chief sufferers from strikes, and that a just method of settling industrial disputes would confer a far greater benefit upon employees than upon capitalistic employers. If the Government should be compelled in



ABOUT THE ONLY "BOARD" THEY'LL EVER PAY ANY ATTENTION TO
From the *Bee* (Sacramento, Cal.)

the public interest to assume the ownership and operation of railroads, it would be necessary not merely to have a Labor Board or some similar agency to adjust wage questions, but it would also be necessary to enforce decisions. A railroad strike under Government ownership should carry with it, as its mildest penalty, an absolute exclusion from all future public employment, in any capacity. Furthermore, it would not be feasible under Government ownership to favor machinists, carpenters, and their fellow craftsmen in repair shops with wage-scales materially higher than those prevailing in private employment. In our opinion, the railroad strikers are better off under private ownership and operation of the roads than they would be if they were wearing the uniform of public employees like so many firemen or policemen or letter-carriers. But, in either case, the public has a right to demand that railway service should be uninterrupted and that there should be no danger that our distribution of coal or food supplies should be stopped by strikes.

Coal Deposits Ought to Be Conserved

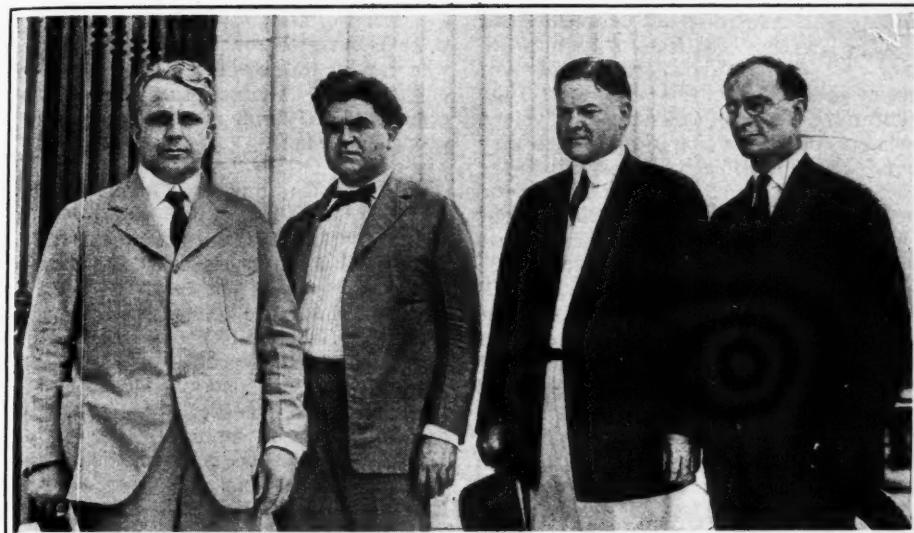
The argument in favor of the public ownership of coal mines is decidedly stronger than that in favor of governmental railroads. It was due to a profound misunderstanding of economic principles that coal deposits were allowed to pass from public to private ownership. The conservation of forests through government ownership has become a universal policy in Europe, and has made great headway in the United States. But the reasons for public conservation of coal deposits are even clearer than those for national forests. The coal that lies in the ground should, of course, be available for current needs; but with proper care it will supply many generations yet unborn. Government is the only proper custodian of the coal supplies that are to serve those Americans of the future. The business of mining and distributing coal should indeed be in private hands; but it should be under public regulation, on some plan of leasing and royalty payments. Private ownership of undeveloped coal lands has always resulted in fallacious speculative valuations; and there is a constant endeavor to make these coal lands pay some kind of current interest on fictitious appraisals or on unsound investments. This explains the over-development of the industry.

An Unsound Industry

It is obvious not only to trained economists but to all clear-headed business men that coal deposits which are to be used a hundred years from now have no present money value. Taxes and compound interest would speedily operate to make the carrying charges impossible for any ordinary owner. It is for a similar reason that great stretches of timber-lands that are not needed for immediate use ought not to be under private control, and could not be long held by private owners except upon the most nominal valuations, with virtual freedom from taxes. These remarks about coal deposits might seem rather theoretical than practical in the face of a coal strike that has lasted several months, with the result that serious inconvenience has already been felt and a shortage for the coming winter is expected even though work should have been fully resumed. Yet it is necessary to realize that the coal industry has been capitalized on an unsound basis, in order the better to understand how strong is the temptation of coal operators to save themselves from utter loss by combinations to restrain output and by other methods for keeping the price to consumers unduly high.

Miners' Unions Have Been Useful

We are not intending in these comments to suggest a fundamental remedy, but we are pointing to the need of a more thorough study of the coal industry in order that the conditions may be fully understood. If one goes into coal-mining districts, he is not likely to find the families of miners living in opulence by reason of steady employment at excessively high wages. A generation ago, the formation of unions among the bituminous miners of Illinois, Indiana, Ohio, and other districts had most beneficent results. It was hard for the anthracite operators in Pennsylvania to accept the fact that they must permit unionization, and must deal with the representatives of the miners as organized by John Mitchell and others. But the system that followed the anthracite crisis of 1902, when President Roosevelt intervened and when the findings of the famous Anthracite Commission went into effect, was decidedly better for American progress and civilization than the conditions that had previously existed. The important thing to grasp is that the coal industry must be made responsive to social conditions that are wholly transformed.



LEADERS OF THE COAL MINERS AND OPERATORS, CONFERRING WITH CABINET OFFICERS AT WASHINGTON

(From left to right are: the Secretary of Labor, Hon. James J. Davis; John L. Lewis, president of the United Mine Workers; the Secretary of Commerce, Hon. Herbert C. Hoover; and Alfred M. Ogle, president of the National Coal Operators' Association)

Coal Strikes Must End There is no solution for labor questions that will usher in the millennium; and at intervals we shall have to find new settlements in view of changed conditions. The great fact at the present juncture has been neither the predicament of the coal industry on the side of the operators, nor the demands of the miners for reformed methods, more uniform work, and more consistent recompense. It is the need of the public in view of the census figures that must point the way to the only settlement that can be stable. As we have already remarked, when our population was as small as it was, let us say, at the end of the Civil War in 1865, there was no general organization of the coal industry, and strikes, though perhaps serious, as those who remember the "Molly McGuires" will testify, were quite strictly local. There might be trouble in a locality in Indiana, or in the Hocking Valley in Ohio; but such troubles were not certain to spread immediately to Western Pennsylvania or West Virginia in the East, nor did they usually affect the coal situation still farther west. Furthermore, fifty years ago, as we have already remarked, most people burned wood in the family cook-stove, and the railroads were able to get such coal supplies as they then needed. We have come into an entirely different situation. The

country needs coal, and cannot endure protracted cessation of mining and distribution.

Time for Industrial Courts

When the legislature of Kansas, under the leadership of Governor Allen, confronted a coal strike that imperilled the lives as well as the convenience of the people of that State, it was justified in creating a tribunal to settle labor questions in certain essential industries in order that strikes and lockouts might not imperil the public safety. The questions involved are not matters of abstract reasoning. They are questions of simple fact, in view of altered conditions. There was once a time when the coal industry was relatively less vital than to-day. And to have attempted then to bring it under governmental regulation might have seemed premature. President Roosevelt was regarded as taking a very radical step when he allowed it to be known that if necessary he would use the army of the United States to see that the nation obtained its coal supply. But, with the lesson then learned, plus the lessons learned under the Government's coal administration of the war period, it is no longer difficult to entertain the idea that the coal supply has public aspects that are of paramount importance.

Typical Americans

Americans are optimistic, and they are fraternally inclined. Men who work on railroads are neighbors and friends, interested in the education of their children, and valued members of the communities in which they live. Every sensible person wishes to see them contented and prosperous. They do not constitute a social or industrial element that is distinct. They are typical of our great average American citizenship. The entire future of our country lies in our ability to overcome tendencies to crystallize our people into hard and fixed classes. We shall meet this tendency and overcome it by the widest possible diffusion of intelligence and prosperity. Education should be sound as well as pervasive. Nothing is more to be desired and encouraged than the tendency of men who work for wages to study political and economic science. We shall be secure from radicalism and dangerous socialism only by virtue of the trained mentality of our workers. Private property is a beneficent institution in a democratic republic, if conditions are such that every intelligent and industrious man may reasonably hope to become a capitalist to some extent, while also earning wages or salary.

Who Are Capitalists?

When the country was relatively small, the great capitalist loomed up as a personage exercising an undue amount of political and economic influence. It was popularly believed in those days that the rich were growing richer and the poor poorer, and that the aggregation of wealth in a few hands was dangerous to our institutions. But the country has grown far beyond that period. It is no longer possible for an adventurous and ruthless man to step out, seize natural resources, and become a multi-millionaire. More than ever, the prosperity of the country requires the investment of large sums of new capital in the conduct of business. We have not nearly enough transportation facilities; and in many other directions we need tremendous investments. Elsewhere in this number of the REVIEW OF REVIEWS, Mr. Welliver, of Washington, presents to our readers a most instructive article on the possibilities of the future development of water-power. This article is timely, because one of the principal methods by which we are to escape from the danger of coal famines is to provide more hydro-electric power for manufac-

ting, transportation, and divers uses. But there is no group of wealthy individuals who can capitalize the great undertakings of the future. The necessary capital must come from the earnings and savings of the people as a whole.

Every Worker Should Be a Capitalist

Our greatest investors nowadays are not wealthy individuals, but are popular associations of which the insurance companies and savings banks are typical. When a particular insurance company is capitalizing the construction of improved homes for many thousands of people—as in the case described in these pages last month—the financial power thus exerted is not that of any rich man or capitalistic group, but that of the 17,000,000 policy-holders, practically all of whom are wage-earners. Certain railroad securities are made legal investments for savings banks under the laws of most of our States; and these banks are very large providers of the capital which is represented in our magnificent transportation system. But the hundreds of millions of dollars thus invested are not the capital of rich men, but that of the millions of workers who carry savings bank accounts. There is no reason why it should not be made increasingly easy for railroad workers to become directly interested in the companies that employ them through purchase of shares of stock; and, in their



MR. HOOVER FEEDS THE STARVING AGAIN

From the *Times* (New York)

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capacity as stockholders, the employees could properly ask and easily obtain representation in the boards of directors.

*Capital
Is Labor's
Best Friend* The kind of development upon which we are entering requires the use of a great deal of capital in large blocks and masses. There will indeed always be room for the use of capital in small amounts in the ownership of homes, of farms, and of minor business enterprises. But every intelligent worker can come to understand that prosperity for the people as a whole requires large-scale production; and that the abundant supply of things that people want cannot be had without continued investments of capital coöperating with trained workers using improved machinery. When the function of capital comes thus to be generally understood, it will be seen how absurd is the idea that there is any inherent antagonism between capital and labor. Without capital, labor would be primitive and inefficient, and poverty would be universal. Capital widely diffused under private ownership is the true American principle. It tends to obliterate class distinctions, and to protect society against plutocracy on the one hand and proletarianism on the other. Government under such conditions may well act as umpire, and see that the economic world, whether from the standpoint of capital, or from that of labor, does not conduct itself in disregard of the common welfare. But a wise understanding of these principles of capital and labor should save us from the dangers and difficulties of socialism that is bad in practice, however glittering in theory; and also save us from an overgrowth of paternalism to which our political system is ill-adapted.

*Settling the
Coal Strike
Piecemeal* While the walkout of the shopmen had, in the middle of August, already lasted six weeks, the coal miners had on that date been away from work for no less than four months and a half. The general condition of the industry is described in this issue of the REVIEW OF REVIEWS by Mr. George H. Cushing, while Mr. George Otis Smith, of the U. S. Geological Survey, tells briefly of the present and prospective coal shortage as it will affect the average citizen. For even with the return to work of all the miners it is evident that it will be many months, perhaps a year, before production

will make up for such a long period of mining inactivity. The first actual accomplishment in settling the strike was the signing, at Cleveland, Ohio, on August 15, of an agreement between operators and miners in the "central competitive" bituminous fields, chiefly in Ohio and Illinois, bringing back to work from 60,000 to 75,000 men. It was understood that the agreement provided for the return of the men at the wages obtaining on March 31 last, when they walked out, and that it is to last until next March. The peace terms also included provision for a commission to make an impartial investigation and find the proper basis for a scale of wages after March of next year. This second item in the agreement is the important one from the point of view of the public.

*The Public
Will Pay* The most disturbing thought suggested by this settlement and subsequent piecemeal agreements that, in the middle of August, seemed likely to take in the anthracite industry as well, is that the demand for coal from the public is about to be so insistent, if not frantic, that both operators and miners can easily agree on any wage-scales with the consumer paying exorbitant prices to make profits for the employers and unduly high wages for the workers. This would be a poor result indeed of the protracted struggle, but it seems the most probable outcome. Early in the summer Secretary Hoover saw the danger of runaway prices and succeeded very tactfully in getting a number of voluntary agreements from dealers to maintain "fair" prices of coal at figures running from \$3.50 to \$4. In August it became increasingly difficult, because of higher costs during car shortages and of urgent demand for coal at any price, to maintain these price limits.

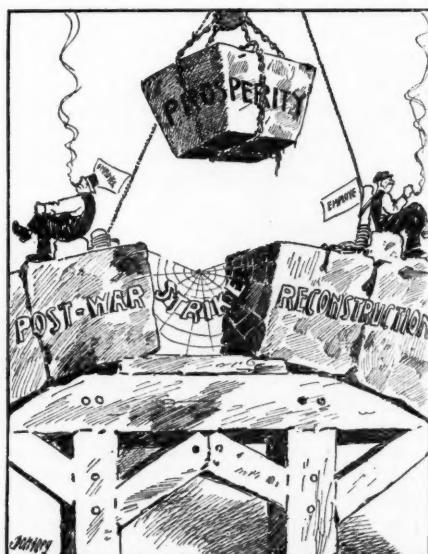
*Events in
the Railroad
Strike* President Harding made two earnest efforts to settle the strike of the railroad shopmen. In both, his central thought and effort, apart from ending the strike, was to establish the authority of the Railway Labor Board. His first attempt, made in the last week of July, consisted of three proposals: (1) that the striking shopmen should return to work with their seniority rights unimpaired; (2) that both employers and employees should recognize the validity of the decisions of the Railway Labor Board; and

(3) that all lawsuits growing out of the strike should be withdrawn. The railway executives rejected the first of these proposals, dealing with seniority rights. They explained that, encouraged by the announcements of the Chairman of the Railway Labor Board, they had made absolute agreements with the loyal men who had stuck to their jobs, and with new men who had come in to keep equipment in safe condition, as to gains in seniority rights; and that the employers had neither the legal nor the moral right to break these agreements. This stand was one that could easily be understood by the public and gained much sympathy for railroad executives. Yet, it seemed decidedly too small a matter, practically speaking, to cause a general tie-up of transportation and industrial paralysis.

The Knotty Seniority Problem Until this juncture it looked as if the shopmen had lost their strike. Trains were generally running on time; cases of defective equipment did not seem to be seriously abnormal, and the railway executives claimed to have about 70 per cent. of their shop forces at work, with new men being hired daily. With the centering of the controversy on seniority rights, and the Administration's suggestion that the strikers lose none of these, the union attitude stiffened visibly. On August 7 came the President's second proposal that the strikers should return to work and that seniority questions should be settled by the Railway Labor Board, after hearings. This suggestion proved unacceptable to the leaders of the strikers, who assumed, because of previous utterances of Mr. Hooper, Chairman of the Railway Labor Board, that the executives would get the best of it in any detailed settlements of seniority issues.

The Brotherhoods Take a Hand At this point the Brotherhoods, the four unions of trainmen proper, whose wages had not been reduced, and who had so far remained aloof from the struggle, began to aid the shopmen with sporadic strikes and walkouts. They attempted to justify their actions by claiming the railroads were using defective and dangerous equipment, and that the presence of soldiers and other armed guards for railway property were an insult to them and endangered their lives. At the same time came numerous reports of violence and outrages. A West Shore pas-

senger train was dynamited, bridges were blown up and shops fired. The incident which most impressed the public was the stalling of through passenger trains of the Santa Fé, in the desert, by the desertion of their trainmen, who left old men and women, invalids and babies without food or proper shelter for four days before they could be rescued. On August 15 came the news that the Brotherhood leaders, after conference with President Harding, had decided to approach certain railway executives of moderate views in an attempt to bring peace. Next day it became known that the executives had consented to meet the strike leaders in New York on August 17, on the basis of discussing a specific proposal from the latter for settling the seniority problem. In brief, this plan was to have the striking railroad men return with seniority rights subordinated to the old loyal men who had remained on their jobs, the returning strikers to have, however, seniority over men who had been freshly employed during the walkout. At the same time President Harding let it be known that he would promptly address Congress, giving a history of his efforts to settle the rail strike and promising to do all the Government could do to preserve order and give the railroads an opportunity to operate without interference.

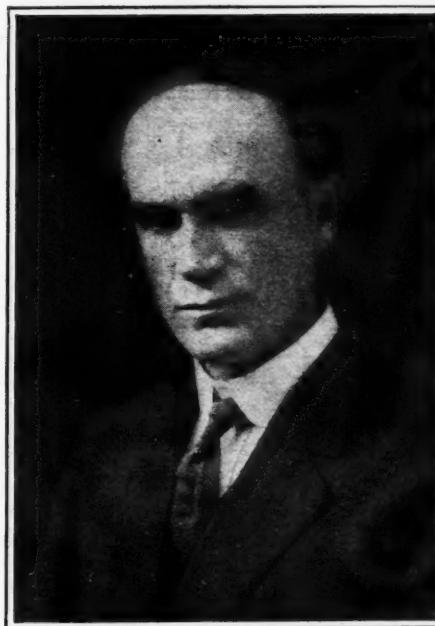


THE LAST STONE IN THE ARCH
From the *Plain Dealer* (Cleveland, Ohio)

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Mr. Harding as Conciliator The country upon the whole has felt that times were becoming more normal, and that the one thing necessary for a fair degree of prosperity has been the settlement of pending strikes before the chasm of industrial strife should become too wide and deep to be easily bridged. President Harding's methods have been those of a patient conciliator rather than a stern arbiter. If he has shown caution and has tried to find workable compromises, it is not true that this has indicated timidity. He was bold enough last month in denouncing the infamous conduct of train crews that left crowded passenger trains stranded in the deserts of the Far West. He has shown himself a model of courtesy and consideration in hearing representatives of all interests, and he has made use of the best official means available to the Administration for securing settlements. The country does not wish to see its Government humiliated by the menace of any private interest whatsoever. But, if White House persuasion can help the contending elements to settle their own differences, there is much praise to be accorded. The Administration has shown itself at once persuasive and capable in dealing with all questions of an international character; and its record in this regard is notably praiseworthy. If it should be able to show, before the November elections, that it has met successfully a series of difficult domestic situations, of which the coal and railroad strikes are examples, it is quite possible that the skies would brighten a good deal for the Republican party.

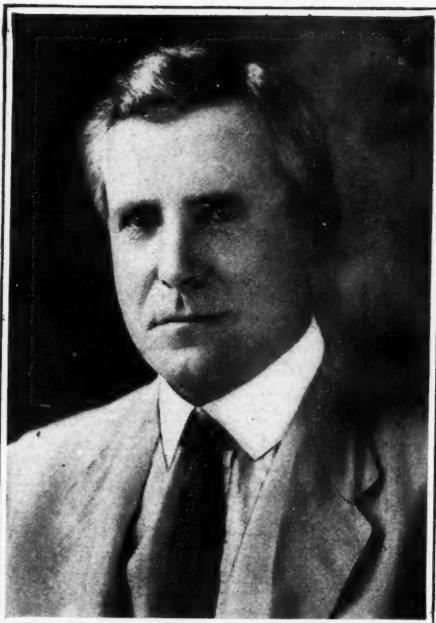
Completing the Senate's Tariff Bill While the Senate was engaged in the long and tedious process of debating the Tariff bill, schedule by schedule, the House of Representatives was enjoying a recess extending from June 30 to August 15. President Harding let it be known that he hoped for a prompt return of Congressmen to Washington, because he might find it necessary to appear before a joint session with a special message relating to the strike situation with a request for legislative action. As successive tariff votes were taken, it was evident that the Senate bill, when finally passed on August 19, would fix the average rates on dutiable articles on levels not only higher than those of the Fordney bill as it had come from the House, but higher than



HON. SIMEON D. FESS, OF OHIO

(Mr. Fess was engaged in educational work in Ohio until about five years ago, having served as president of Antioch College until he resigned in 1917; but he had already been active and prominent in the public affairs of Ohio, and next March he will have served ten years at Washington in the House of Representatives. He is highly qualified for a seat in the Senate, and will make a strong run against Senator Pomerene. He is a close political and personal friend of President Harding.)

those of any previous American tariff. In our "Record of Current Events" (see page 247) will be found a summary of the proceedings of the Senate in dealing with particular schedules. Apart from rates of duty, the House had adopted an important innovation which the Senate has rejected, while, on the other hand, the Senate has adopted an innovation of its own. The Fordney bill had come to the Senate with valuation at American ports substituted for the established plan of basing duties upon purchase prices abroad. The most striking novelty in the Senate bill is the provision for so-called "flexibility." Under this plan, the Tariff Commission will be given greatly enhanced importance. It will constantly study the relative conditions of production at home and abroad, and will be charged with the duty of informing the President when particular rates do not suffice to protect home industries from destructive competition by reason especially of low wages abroad. On such advice from the



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SENATOR JAMES A. REED, OF MISSOURI
(Mr. Reed has won a victory in the Democratic primaries of his State after a contest that will be memorable in the history of American politics)

Tariff Commission, the President is authorized to announce a change of tariff rates in a manner prescribed by law.

*Conference
May Be
Prolonged* We shall expect to present an article in our next number, written by a tariff expert at Washington, explaining more completely the facts and principles relating to the pending Tariff bill. It is by no means certain that the new tariff will be enacted in the present session. After the passage of the Senate bill on August 19, the work of the conference committee was due to begin. Mr. Fordney and his associates, as House conferees, were confronted by a Senate bill that bore no close resemblance to the bill that the House had taken a year to produce. The Republican House had begun to formulate its new tariff a good while before the inauguration of Mr. Harding, hoping to have it ready for prompt passage at the extra session in the spring of 1921. Yet with almost two years elapsed since the election in 1920, the Underwood Tariff still remains on the statute books. Viewed broadly, this is creditable to Republican discretion. Conditions following the war

have been changing so fast that a sweeping revision of the tariff was as untimely as it was difficult. If the conference committee should prolong its labors, and fail to report before the November elections, the country would not suffer and the Republican party might be the gainer.

*The Bonus
Bill to
Come Next* It had been agreed in the Senate that the Bonus bill should be brought to a final vote after the passage of the Tariff bill. Nothing had happened for many weeks to change the status of the Bonus bill in Congress, and the public mind had been occupied rather with the coal and railroad questions, and various other matters of immediate concern. Unfortunately, a great majority of Senators had become committed by some earlier pledge at home, or some public utterance, to the general idea of a soldiers' bonus. They have had a full opportunity to know how untimely and improper is the bill that was passed months ago by the House. It has been quite certain all along, however, that the Senate would endorse the bonus measure by a large majority. The President had made it plain enough that he would disapprove of the bill unless it carried with it a plan for raising money; and the only feasible plan has been the sales tax. It is reasonable to expect, therefore, that the Bonus bill will go to the President, and that he will veto it with a strong and convincing message. It is also wholly certain that the House of Representatives will immediately pass the bill over the President's veto by the necessary two-thirds majority.

*The Senate
and a Veto* The remaining point of doubt has to do with the Senate. With a full vote, thirty-three Senators sustaining the President could prevent the passage of a measure that would burden the country with several billion dollars of new indebtedness without conferring any commensurate benefit upon the ex-service men. But, while there was no doubt last month as to about thirty Senators, there was serious question whether as many as thirty-three could be rallied to sustain the President in his undoubtedly sound position. It is not pleasant to feel that if Senators were acting in the light of present knowledge and conviction, rather than in consistency with some unfortunate commitment made two or three years ago,

he President's views, which are also those of the country as a whole, would be upheld. As we have previously set forth in these pages, the bonus burden would injure the service men far more in indirect ways than it would aid them directly. The benefits would be transient; but the ensuing burden would be permanent.

*More
Primary
Contests*

Under the heading of "American Politics and Government," in our "Record of Current Events," will be found a brief chronological summary of primary elections and political events from the middle of July to the middle of August. In Nebraska, the Senatorial contest this fall between Senator Hitchcock, the distinguished Democratic leader who was renominated, and the Republican candidate, Mr. Robert B. Howell, who has served as Mayor of Omaha, will have national interest. Mr. Charles W. Bryan, the brother of the eminent Commoner, is running for the Governorship against Mr. Charles H. Randall. The Texas primaries occurred on July 22, Senator Culberson being defeated for renomination. The final contest between the two leading Democratic candidates was to occur on August 26. On August 1 there was held the stirring primary election in Missouri, with the result that Senator James A. Reed has secured his renomination. Mr. Breckenridge Long, who ran against Reed, was the avowed exponent of the Wilsonian element. The Republican candidate is Mr. R. R. Brewster. In Virginia, Senator Swanson was renominated, ex-Governor Westmoreland Davis being his competitor.

*Ohio
Politics*

The Ohio primaries occurred on August 8, and the Republicans nominated Representative Simeon D. Fess to run against Senator Atlee Pomerene, while Col. Carmi A. Thompson was named for the governorship against Mr. A. V. Donahey. If the Democrats should carry the State in November, Mr. Pomerene would be regarded as a presidential candidate, and Ohio would have to decide whether to present the name of the successful Senator in the national convention or again to bring forward James M. Cox, of Dayton. Mr. Cox has not abandoned his interest in public affairs since Mr. Harding defeated him in November, 1920. He has recently returned from a sojourn abroad, where he studied



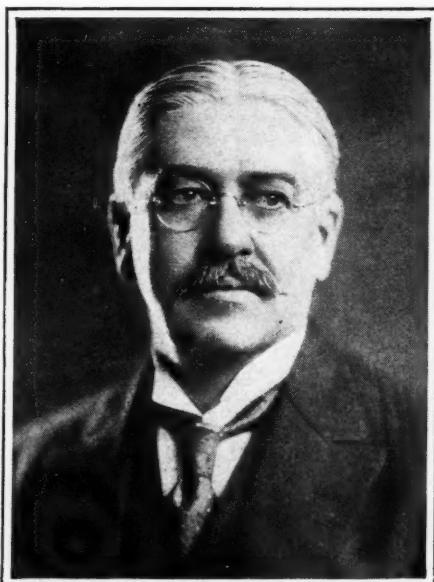
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SENATOR ATLEE POMERENE, OF OHIO

(Mr. Pomerene's renomination in the Democratic primaries was unopposed. The Republicans of the President's home State will try to win Pomerene's seat for Congressman Fess)

foreign situations at first hand, and particularly occupied himself with the present work and future possibilities of the League of Nations. His reappearance in active politics will be as a champion of the League.

Mr. Hearst and New York Politics In the State of New York, a new election law takes effect this year, and the system of convention nominations is partially resumed after ten years of experience with primaries. The convention nominations apply only however, to State offices, judgeships, and to the United States Senatorship. There will be primaries on September 19 to nominate candidates for the House of Representatives, the State legislature, and local offices. The conventions follow soon after. New voters this year must know the English language, under a recent Constitutional amendment. It is altogether probable that the Republican convention will accord renomination to Senator Calder. It is also quite certain that the Republicans will insist upon Governor Miller's consent to run for another term, in view of his remarkably fine record at Albany. In Democratic circles,



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GOVERNOR NATHAN L. MILLER, OF NEW YORK

(Governor Miller's administration has been one of the most efficient in the history of the Empire State. The Republicans will renominate him by acclamation. Many conservative and independent Democrats will vote for him unless their own party makes a nomination of which they can approve)

the only question has been whether or not Mr. William Randolph Hearst should be named for Governor. The movement to defeat Hearst's candidacy centered its hopes upon securing the consent of ex-Governor Alfred E. Smith to run again. After several weeks of uncertainty, Mr. Smith announced on August 15 that he was willing to serve again at Albany and to go before the voters in the September Democratic primary. The movement to nominate Hearst is in earnest, and strongly supported behind the scenes. While identified more usually with the Democratic party, Mr. Hearst has used his powerful newspapers along independent rather than partisan lines. He has been identified with many popular measures. He has previously run for high office more than once in the State of New York, yet many people throughout the country continue to regard him as a Californian. His father was in the United States Senate from that State, while the son began his newspaper career in San Francisco after leaving college, and continues to own newspapers in that city and also in Los Angeles.

Reducing Our National Debt Comparatively few people realize how rapidly we are reducing our war debt, which reached its peak on August 31, 1919—\$26,596,000,000. Before the borrowings for the World War, the greatest debt the United States Government had incurred came in the course of the Civil War, and it reached its record height in August, 1865—\$2,381,500,000. Only three years ago, with the national indebtedness more than eleven times as much as the Civil War borrowings, it would have seemed scarcely credible that in the troublous financial time of the post-war period the nation would succeed in reducing its obligations at the rate of more than \$1,200,000,000 a year. This, however, is just what has been done, the debt standing on July 1 last at \$22,963,000,000. At this rate of reduction, it is obvious that the debt will be entirely extinguished in twenty-three years, or in 1945. As compared with this, Great Britain has, in the three years since 1919, brought down her total debt from its high figure of slightly more than £8,000,000,000 to £7,700,000,000. Thus, while the United States Government was effecting a reduction of 13½ per cent. in its debt, the British Government in the same three years reduced its obligations by only 4 1-10 per cent. Our current efforts compare, too, very favorably with the extinction of the Civil War debt. Three years after its peak was reached, the reduction amounted to only \$133,000,000, or 5½ per cent. against our present reduction—\$3,633,000,000, or 13½ per cent.

Treasury Problems Solved Only eighteen months ago the Treasury was confronting the prospect of having to deal with the Victory Loan of \$4,250,000,000 maturing in May, 1923, while large additional short-term obligations were coming due within the same period. Secretary Mellon lost no time in taking advantage of the extraordinary movement in interest rates to get rid of \$2,000,000,000 of the Victory Loan, partly by redemption and partly by conversion into new obligations coming due some years later. The Government can now borrow money on short time on a 3½ per cent. basis. In August, Secretary Mellon announced that the 4½ per cent. 4-year Treasury loan had brought \$475,000,000 in subscriptions. Of this sum, Victory bonds exchanged for the new obligations amounted to \$130,000,000. Furthermore, the Treas-

sury has called for redemption in December of this year \$1,000,000,000 of the Victory Loan, so that there will be left to pay in May, 1923, less than \$1,000,000,000, instead of the original figure of \$4,500,000,000. The Treasury's prompt and skillful use of the opportunities of the lower money market, combined with the general falling tendency of interest rates, has brought a new and very different aspect to the quotations for the various classes of Liberty bonds. The short term $3\frac{1}{2}$ per cents. are selling currently at or near 101, and every issue outstanding is quoted above par.

Bumper Crops for 1922 The Government's crop report in the month of August is the first one of the year on which final confidence can be placed with regard to most of the farm products. The report issued on the 8th of last month was a most cheerful one. July had brought rarely favorable weather for almost all kinds of growing things on the farm. As a result, the Department of Agriculture was able to forecast a three-billion bushel corn crop for the fourth time in our history. The greatest crop of hay ever raised, estimated at 93,100,000 tons, is already assured. The second largest yield of white potatoes and the largest production of sweet potatoes are promised, with exceptional yields of tobacco and apples. With the two wheat crops about up to the average of the last five years, the general result of the season's farming activities is as good as the best on record. At August prices, seventeen farm crops indicate a value of over \$7,100,000,000, exceeding the 1921 figure by \$1,200,000,000. Of this impressive total, corn accounts for \$1,943,000,000, hay for \$1,078,000,000, wheat for \$782,000,000, and potatoes for \$505,000,000.

Astonishing Output of Motor Cars At the beginning of the present year, competent authorities made forecasts of motor-car production for 1922, agreeing on something like 1,800,000 passenger cars and trucks. This did not look pessimistic in the first quarter of the year, the output for January being only 91,037 units. With the astonishing resiliency shown more than once by the motor-car trade, production rose so rapidly from the January figure as to reach 280,000 in June, with a total for the half-year of 1,143,678. Evidently the calculations of experts will be entirely upset, and

the year will see nearer two million and a half cars sent out from the shops, and possibly establish a new record. It is now thought that the total productive capacity is nearly 3,500,000 cars a year, while only one and a half million cars are required to replace worn-out vehicles in this country. Mr. Ford says that instead of reaching the saturation point at 10,000,000 cars turning their wheels throughout the United States, we will soon be using 30,000,000, or one motor car for every four or five inhabitants. If he is anywhere near right, the present production of replacement requirements and of nearly 2,000,000 cars to cover export trade and new buyers, will not look so formidable. It is to be noticed, however, that within the last two months a new area of price-cutting has begun.

The Brazil Centenary Secretary Hughes' plans take him to Brazil as chairman of a group of American commissioners named by the President to represent this country at the celebration in early September of the Centennial of Brazilian Independence. We celebrated our own centennial in 1876 by holding an International Exposition at Philadelphia. Brazil, in like manner, is now opening an exposition. We are publishing in this number an article on Brazil and its Centenary by Mr. Roy Nash. The relations between our Government and that of Brazil have always been of the most satisfactory character. While we have no official alliances, there are understandings between Washington and Rio, the basis of which is mutual confidence. There is, of course, no hidden diplomacy involved in this friendship between the two countries.

Chile and Peru Accept Arbitration Secretary Hughes goes to South America with especial satisfaction at this time because, before the end of July, the Chilean and Peruvian delegates at Washington had signed an agreement referring the long-standing territorial dispute between their countries to President Harding for final arbitration. This is one of the most signal triumphs for the principle of arbitration that has ever been won. Chile has been exceedingly tenacious in her hold upon the Provinces of Tacna and Arica, occupied as a result of the war with Peru many years ago. Peru, on the other hand, has been equally determined not to abandon the provinces

without every possible effort to regain them. The endeavor to dispose of the question by direct negotiation having failed, nothing remained except the continuance of a dangerous dispute, which might at any time lead to war, or else the settlement by outside arbitration. Under President Harding's direction, the work of arbitration will be pursued in the most impartial and conscientious spirit.

Cuba and Mexico

During the present summer, through General Crowder as American representative and administrative expert, serious efforts have been made to persuade the Cuban Government to adopt financial reforms that would maintain solvency and protect the foreign debt. Uncle Sam has no desire to intervene in Cuban affairs, and the whole object of General Crowder's efforts has been to help Cuba to manage her own affairs successfully; and thus obviate the need of so unpleasant a thing as American intervention under terms of existing agreements. As regards Mexican affairs, it can only be said that President Obregon has accepted the agreement made tentatively some weeks ago in New York by his Finance Minister, Mr. de la Huerta. But there still remains the necessity of securing ratification by the Mexican Congress, which was expected to take up the matter in September.

Canada's Summer of Discussion

Our neighbors in Canada have their own problems, and they are busy discussing them this summer in the press and on the platform. The Prime Minister, Mr. Mackenzie King, has expounded his policies on the stump with eloquence and popular approval, while his predecessor, the Rt. Hon. Arthur Meighen, has been criticizing the Liberal majority and its leaders with vigor and in great detail. The Premier has been presenting large and statesmanlike views on the subject of reciprocity between Canada and the United States. It has been decided to put the control of all the Government railways under one board of management; and this railway problem is at the center of much current argument. Canada has 22,000 miles of railway under Government ownership and operation, this being the largest Government system in the world. It is the admitted intention of the Canadian Government, if the United States is not liberal in tariff arrangements, to make in-



HON. WILLIAM L. MACKENZIE KING, CANADA'S PRIME MINISTER

(Mr. King has brought his Liberal majority through its first parliamentary session and during August was making political addresses)

creased discrimination in favor of British imports. There are some sectional questions that are arousing a lively controversy. The great Provinces of Quebec and Ontario are, relatively speaking, consumers rather than producers of food supplies. Canada still has an official wheat board, the object of which seems to be to maintain prices for the benefit of the wheat-growing Northwest.

Farmers in Canadian Politics

The so-called Prairie Provinces are also accused of demanding more than their fair share of representation in the national Railroad Board. The Province of Manitoba last month entered upon the experiment of an agricultural Ministry. The Premier is a professor in an agricultural college, and the members of his cabinet are new to politics. The August speeches of the Dominion Premier, Mr. King, were devoted chiefly to a review of the work of the recent session of Parliament, which was the first one under his premiership. He is an accomplished student of industrial economics, and he speaks with knowledge when he declares that conditions in Canada are prosperous in comparison with other countries. As re-

gards immigration, the Government is seeking desirable colonists from Great Britain, and is still looking to the United States for practical farmers. It is stated in Ottawa that there are now seventeen Canadian immigration agencies operating on the American side of the line. The immigration question is slated for action in the next session of the Dominion Parliament.

The London Conference It is not this month, nor is it

next month, that will see a solution of the profound problems that are agitating the principal Cabinets of Europe in the endeavor to harmonize their conflicting policies and to reestablish their finances. Frank discussion and the lapse of time will almost surely avail to diminish the differences that have been so glaring as between British and French ideas. It was reported in the middle of August that the Conference of London, which Mr. Simonds discusses at length in our present issue, had ended without reaching conclusions as to main points. But there is still hope that England and France may continue their efforts to coöperate, and may come to terms regarding German reparations and inter-allied debts. Mr. Simonds discusses with great frankness the relation of the United States to the European crisis, and does not hesitate to criticize the Balfour Note, which had intimated that the United States was standing in the way of European settlements by failing to cancel the indebtedness of the respective allied governments. We have already discussed this question in the past.

Debts and Reparations Great Britain is a solvent country, and when its Government borrows from American investors it can and should pay them back quite as scrupulously as it pays back the money that it borrows from British investors. This is so obvious to anyone who goes into the question from the standpoint of facts, that nothing remains to be said. The money loaned to France by Great Britain during the four-years' war period was one phase of the close relationship of two allies fighting a common war, in which the existence of both was at stake. It is to be assumed that each did its best, and that their efforts were united to win the war. Both made large territorial and other gains in the peace settlement, besides gaining their fundamental object of defeating Ger-



THE LATE VISCOUNT NORTHCLIFFE

(The most famous of British editors and publishers, who died August 14, was born July 5, 1865. He made his reputation as Alfred Harmsworth, son of a Dublin barrister of the same name. He was raised to the peerage as Baron Northcliffe of the Isle of Thanet in 1905, and in 1917, as a reward for his war services, he was made Viscount. It would not be an exaggeration to say that during the past ten years he had been the most influential personage in the entire world)

many. It is hard to see how England could expect to collect money from France in view of the greater contribution of men and military effort that was made by France in the common cause. Money borrowed by France from the United States was lent as a very small part of the major effort of this country to help win the war. If England were not perfectly solvent and wholly able and willing to take care of the debt to the United States, there would be little demand here for repayment, and American taxpayers would continue to bear the burden. This is understood by the wiser heads in Great Britain. France is in a much more difficult financial position, and has her devastated regions to repair.

Lord Northcliffe and His Influence The death of Lord Northcliffe was regarded last month as an international event of first importance. Through his control of the *London Times* and many newspapers and periodicals, as well as through his great ability and strong personality, he had become the most influential man in the British

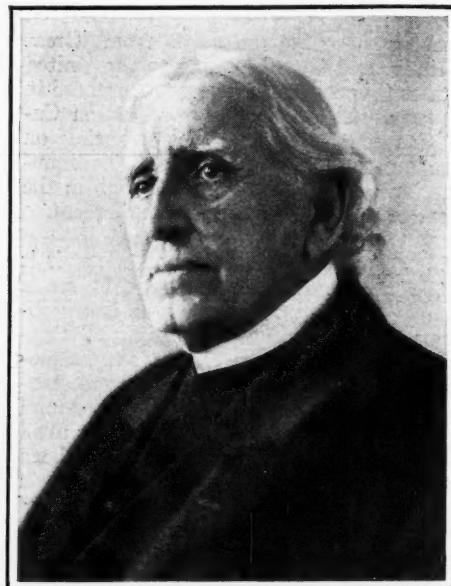


THE LATE HON. ARTHUR GRIFFITH, PRESIDENT OF THE IRISH PARLIAMENT

(Mr. Griffith, who died suddenly on August 12, was the founder of the Sinn Fein movement, and, more than any other man, the creator of the Irish Free State. He was born in Dublin and was fifty years old)

Empire. He was not only a friend of the United States, broadly speaking, but he was also the personal friend of a large number of individual Americans. He had played so bold and uncompromising a part in the making and unmaking of British Cabinets, and in foreign as well as domestic politics, that he could but have made bitter enemies while he was making strong friends. But antagonisms were forgotten when the general tribute was paid to his lovable qualities and his genius for affairs.

The Work of Arthur Griffith The death of Northcliffe had followed only a day or two after that of Mr. Arthur Griffith, who occupied the leading place in the official life of the new Irish Free State. He succumbed to heart disease at the very moment when the collapse of the rebellion raised by the extremists under de Valera had given assured success to the Free State, with the bright promise of good relations between England and Ireland and a brilliant future for the Irish race in the British Empire. Mr. Griffith had been a patient and devoted worker for the Irish cause, and his work had been crowned with success.



THE LATE REV. DR. FERDINAND C. IGLEHART OF NEW YORK

(Dr. Iglehart was born in Indiana in 1845, and graduated at DePauw University. He began his career as a Methodist minister fifty-two years ago. He was a real orator and religious Journalist)

Eminent Americans

Our American obituary list contains the name of Alexander Graham Bell, who had invented the telephone and had lived in honor and prosperity to a vigorous old age. Mr. Bell's career is summarized elsewhere in this magazine. Mr. Charles R. Miller was Editor-in-Chief of the *New York Times*, where he had served in harmony for more than twenty-five years with Mr. Ochs, the present owner of the paper. For a long period previous to the purchase of the *Times* and its reestablishment by Mr. Ochs, Mr. Miller had been editorially connected with the paper. He was a journalist of high standards, much ability, and discriminating judgment. The Rev. Dr. Ferdinand C. Iglehart was a leader in the Methodist denomination, an orator of rare power to charm and convince audiences, and a typical product of American pioneering at its best. He was a leader in the anti-saloon movement, and wrote a widely read book entitled "King Alcohol Dethroned." He had a talent for politics and was a devoted friend of Theodore Roosevelt. Several years ago he wrote a book entitled "Roosevelt as I Knew Him," which has had deserved success.



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THE COAL RESERVE OF A PUBLIC UTILITY IN NEW YORK CITY

(The electrical requirements of the metropolis are protected by a 240,000 ton reserve across the Hudson River from Manhattan. The Edison Company, supplying only electric light and power, calculates that this enormous tonnage would last the city for ten weeks. Gas light and fuel are a separate problem, as are the power requirements of the several subway, elevated, and street-car systems)

RECORD OF CURRENT EVENTS

(From July 15 to August 15, 1922)

PROCEEDINGS IN CONGRESS

July 15.—In the Senate, a Tariff-bill amendment proposed by the Committee on Finance, extending the embargo on foreign dyes a year, is defeated, 38 to 32; fourteen Republicans vote with the Democrats to defeat the proposal.

July 20.—The Senate modifies the Finance Committee's high rates in the cotton glove schedule, twenty Republicans voting with the Democrats; the maximum rate is to be 75 per cent. ad valorem.

The Senate Agricultural Committee reports on legislation to develop the Muscle Shoals power project, recommending rejection of Henry Ford's offer and operation by a Government-owned company.

July 26.—In the Senate, an effort by Mr. Lenroot (Rep., Wis.) to reduce to 60 per cent. ad valorem the Finance Committee's rates on woolen imports—declared to run as high as 137 per cent.—ends in failure; seven Republicans vote with Mr. Lenroot.

July 29.—In the Senate, Mr. Caraway (Dem., Ark.) demands an inquiry into the financial or professional interest of members in pending tariff schedules.

July 31.—The Senate completes consideration of the wool schedule of the Tariff bill, sustaining the Finance Committee in all essentials; Mr. Walsh (Dem., Mass.) declares that a suit of clothes valued at \$29.53 would pay a duty of \$18.20 under the Senate rates, \$23.94 under the House rates, \$10.34 under the Underwood law, \$12.14 under the Emergency Tariff, and \$19.48 under the Payne-Aldrich law.

August 3.—In the Senate, Mr. Gooding (Rep., Id.)—who admits his own interest in wool-raising—offers a resolution to investigate not only the financial interest of members in wool and other items in the Tariff bill, but also the interest of members and others in newspapers opposing the measure through pressure from advertisers.

August 8.—The Senate fixes the duty on sugar at \$2.30 per hundred pounds (less 20 per cent. on Cuban importations), the highest rate in fifty years; the Underwood law set the duty at \$1.20.

August 9.—The Senate (39 to 26) overrules the Finance Committee's recommendation of a duty of four cents a pound on dried hides and two cents on raw hides, and hides will remain on the free list; boots and shoes are also placed on the free list.

August 11.—The Senate adopts an amendment to the Fordney-McCumber Tariff bill creating flexible rates under control of the President until July 1, 1924; the vote is 36 to 20.

August 12.—The Senate sets August 19 as the date for final vote on the Tariff bill.

AMERICAN POLITICS AND GOVERNMENT

July 18.—Nebraska primaries result in nomination of Robert B. Howell for United States Senator by Republicans and the renomination of Senator Gilbert M. Hitchcock by Democrats; Charles W. Bryan (Dem.) and Charles H. Randall (Rep.) are nominated for Governor.

Ten persons are indicted for fraud in sales of surplus lumber for the Government after the war,

the first indictments resulting from Attorney-General Daugherty's investigation of war frauds.

July 21.—The Attorney-General reports to the Senate that there is no violation of anti-trust laws in the proposed mergers of the Bethlehem and Lackawanna and the Republic and Inland steel companies.

July 22.—In the Texas Democratic primary, Senator Culberson is defeated for renomination; Earle B. Mayfield is the leading candidate, with ex-Governor James E. Ferguson in second place.

July 25.—President Harding selects—in addition to Secretary Hughes as chairman—the American Commission to attend the opening of the Brazil Centennial Exposition on September 7; Major-General Bullard, Admiral Jones, and Chairman Porter of the House Committee on Foreign Affairs.

An embargo against importation of wines and liquors is declared until present supplies for non-beverage purposes are exhausted.

August 1.—Primary elections in Missouri result in Democratic renomination of Senator James A. Reed, while R. R. Brewster is named by Republicans. . . . In West Virginia, Senator Howard Sutherland (Rep.) is renominated, and Mansfield M. Neely is named by the Democrats. . . . In Virginia, Senator Claude A. Swanson (Dem.) is renominated. . . . In Oklahoma, Miss Alice Robertson, Republican Representative, is renominated; J. C. Walton (Dem.) and John Fields (Rep.) are nominated for Governor. . . . In Kansas, Representative Philip Campbell, chairman of the House Rules Committee, is defeated for renomination by W. H. Sproul of Nedan; W. Y. Morgan (Rep.) and Jonathan Davis (Dem.) are nominated for Governor.

August 3.—Tennessee Democrats renominate United States Senator Kenneth D. McKellar, while Republicans choose Newell Sanders, of Chattanooga; for Governor the Republicans renominate Alfred A. Taylor, incumbent, and the Democrats choose Austin Peay.

August 8.—In Ohio primary elections, Carmi A. Thompson (Rep.) and A. V. Donahey (Dem.) are nominated for Governor; and Simeon D. Fess (Rep.) will contest for the Senatorship with Senator Atlee Pomerene. . . . Arkansas Democrats renominate Governor T. C. McRae. . . . In Alabama primaries, W. W. Brandon wins the Democratic nomination for Governor.

August 9.—The Texas Republican convention nominates E. P. Wilmot, of Austin, for Senator and W. H. Atwell for Governor; the platform denounces the Ku Klux Klan.

August 11.—The Chief of Army Engineers announces allotment of \$35,604,250 of the \$42,815,661 available under the Budget for river and harbor improvements under the new system; \$7,179,000 goes for flood control and over \$3,000,000 on harbor development at New York.

Utah Democrats, in convention, renominate Senator William H. King; the Republican nominee is Ernest Bamberger, a mining engineer.

August 15.—Ex-Governor Alfred E. Smith notifies fellow Democrats in New York State that he will run for Governor, a position for which William Randolph Hearst is said to be ready to organize a third party in order to win.

The Democratic primary in Mississippi is held,

with every probability that a second contest will be necessary to decide between Herbert Stephens and ex-Senator James K. Vardaman.

FOREIGN POLITICS AND GOVERNMENT

July 18.—Two gunmen, known as the murderers of German Foreign Minister Rathenau, commit suicide as the police ferret them from their hiding place in a castle tower near Naumburg.

Reginald Dunn and Joseph O'Sullivan are sentenced to death at London, for the murder of Field Marshal Sir Henry Wilson—26 days after the crime.

July 19.—The Italian Cabinet of Premier Facta resigns; Fascisti are causing riots and trouble in many cities.

July 20.—It is officially announced at Berlin that Germany has consented to Allied supervision of her finances.

July 21.—Irish Free State troops capture Limerick and Waterford, routing Republican rebels who retreat to the south; Cork is the only large city remaining in the hands of insurgents.

Heavy fighting occurs in China at Shiu-chow between remnants of Sun Yat-sen's forces and soldiers of General Chen Chiung-ming, who controls Canton; Sun's men are defeated.

July 25.—Djemal Pasha, former Turkish Minister of Marine, and Chief of Staff of the Afghan Army, is assassinated at Tiflis by Armenians.

July 26.—Dr. Paul S. Reinsch, formerly American Minister, is appointed financial adviser of China.

July 27.—Irish rebels at Dundalk mine the prison, and 105 of their comrades, who were locked up, escape.

July 31.—Free State troops capture Tipperary from Irish Republican rebels.

Poland has a new Cabinet, headed by Premier Julian Nowak of the University of Cracow (considerable difficulty had been experienced in selecting a sufficiently vigorous Premier).

August 1.—Harry Boland, Sinn Fein emissary who raised funds in America, dies of wounds received when captured by Free State troops.

Luigi de Facta remains Premier of Italy, having succeeded in reforming his Cabinet after other former premiers had failed; Carlos Schanzer continues as Foreign Minister.

The Chinese Parliament of 1917 reassembles with a quorum in both houses.

August 2.—The Chilean Cabinet resigns, owing to friction resulting from the agreement for settlement of the Tacna Arica dispute; President Alessandri refuses to accept the resignations.

Italian Fascisti mobilize to defeat a general strike started two days ago in protest against reprisals on Communists.

August 4.—In large Italian cities, especially in Milan, Fascisti (ultra-Nationalists) fight desperately with Socialists and Communists; at Ancona, the Anarchist Club, the Chamber of Labor, the Railway Men's Club, the Soviet Club, and other places are destroyed; thousands are wounded, and scores of persons are killed.

August 5.—Arthur Bernardes, the President-elect of Brazil, forms a Cabinet, with Carlos de Campos as Minister of Justice, and Assis Brazil as Foreign Minister.

August 6.—The Italian provinces of Genoa,



Mrs. Ben C. Hooper, of Wisconsin



Mrs. Anna Dickie Olesen, of Minnesota

THE TWO WOMEN NOMINEES FOR UNITED STATES SENATOR

(Each has been nominated by the Democrats of her respective State, as the party's choice for United States Senator. Mrs. Hooper is president of the League of Women Voters in Wisconsin. She was unanimously endorsed at the Democratic convention June 27 and will be regularly nominated in the primaries of her party on September 5. Mrs. Olesen is the first woman to secure the Senatorial nomination of a major political party in this country. She was nominated for the United States Senate by Democrats in the Minnesota primaries on June 20. Mrs. Olesen was born on a farm thirty-six years ago and has a daughter, Mary, who is fourteen years old. Her husband is superintendent of city schools at Cloquet, Minnesota)

Milan, Parma, Ancona, and Leghorn are placed under martial law.

August 7.—In Italy, the province of Brescia is placed under martial law; passage of motor lorries is forbidden (these are the chief conveyances of the Fascisti).

August 8.—The Italian Fascisti are ordered demobilized by their leader, Benito Mussolini.

August 9.—Irish Free State troops from Dublin transports at Queenstown, Yougal, Cork, Bantry, and Tralee, to outflank Republicans retreating on Cork.

At Moscow, fourteen leaders of the Social Revolutionary conspiracy are sentenced to death by the Soviet Revolutionary Tribunal; others receive long prison terms; three informers are condemned to death, with a recommendation of mercy.

In Portugal, a general strike causes the Government to move to Fort Cascaes; a state of siege is proclaimed and constitutional guarantees are suspended.

August 10.—Irish Free State troops capture Cork—the last stronghold of the rebels; several important buildings are burned by the retreating Republicans.

August 11.—Berlin celebrates the third anniversary of ratification of the Republican constitution.

August 12.—Sun Yat-sen, the deposed president

of South China, leaves Canton harbor in a British gunboat for Shanghai, where he expects to combine with other leaders to settle on future policy.

Nicaragua suppresses a revolution by elements of the Liberal party who were reinforced by refugees from Honduras and Salvador; the trouble centers at Chinandega and Leon.

August 14.—In Egypt, a British court-martial condemns seven Zaghulists to death, but commutes the sentence to seven years in prison and £5,000 fine.

INTERNATIONAL RELATIONS

July 15.—Herbert Hoover reports to President Harding expenditures of \$59,500,000 for Russian relief, with no deductions for administration; 788,878 tons of food and medicine were used to save from famine and disease 3,250,000 children and 5,300,000 adults in 15,000 kitchens through 200 American workers directing 80,000 Russian assistants.

Charles V. Vickrey, secretary of the Near East Relief, reports to President Harding that 1,000,000 persons have been saved at a cost of \$70,000,000; thirty-eight hospitals, 124 orphanages, and fifty-nine clinics are maintained by the association.

July 17.—Germany pays her instalment of 32,000,000 gold marks to the Reparations Commission's depositories.

July 18.—Señor Adolfo de la Huerta, Mexican

Minister of Finance, confers with President Harding and Secretary Hughes.

July 19.—The Hague conference between Russia and the Allies ends futilely, with a good deal of politics, but little economics, and a great quantity of mystery indissoluble by the press.

July 21.—Chilean and Peruvian delegates sign the arbitration protocol for adjustment of the Tacna-Arica dispute (together with the supplementary act) recently negotiated at Washington.

July 22.—The Council of the League of Nations confirms the Palestine and Syrian mandates, which will go into effect as soon as France and Italy agree on points of the Syrian mandate now in dispute.

July 24.—London receives a note from Washington suggesting measures for elimination of liquor-smuggling from the British West Indies.

July 27.—The United States recognizes the Baltic Republics of Lithuania, Latvia, and Estonia.

July 29.—Greece notifies the Allies that, though she does not intend to capture Constantinople (now under the Allied Commission), she resumes entire liberty of action to end her war with the Turkish Nationalists, despite the truce arranged several months ago. . . . No peace had resulted from the truce established by the Allies, for whom Greece was ostensibly enforcing the Treaty of Sèvres.

King Constantine of Greece announces that the territory of Smyrna will be given autonomy under protection of the Greek Army.

Soviet Russia and the Far Eastern Republic accept a Japanese invitation to confer regarding withdrawal of the latter from the Maritime Province.

July 30.—Conferences are begun at Washington to adjust the war debts of France and England.

July 31.—British troops reinforce French soldiers on the Tchatalja line; the joint forces are prepared to resist Greek incursions; at Smyrna, a new Greek entity is proclaimed in "Occidental Asia Minor"; 70,000 Greeks are under arms in Thrace.

August 1.—Great Britain sends a note to her allies in the war, asking payment of debts to the amount England pays America, but stating that cancellation would be preferred except for America's attitude.

August 3.—The Council of Ambassadors notifies Bolivia to dispense with all German army advisers in compliance with Article 179 of the Treaty of Versailles, which Bolivia signed.

August 4.—Germany sends a supplementary note on payment of private debts contracted in France before the war; Germany wants the amount reduced. . . . Nearly 70,000,000 French francs have been transferred by German banks from France to Holland and Switzerland.

August 5.—Lloyd George and Premier Poincaré, with representatives of Belgium and Italy, gather at London to discuss reparations, war debts, and property compensation claims.

August 7.—President Obregon of Mexico signs the debt agreement negotiated at New York by Finance Minister de la Huerta; the compact is to be ratified by the Mexican Congress in September.

August 8.—Nine of the fifteen available cables between the United States and Europe are closed to traffic at Waterville and Valencia by Irish Republican insurgents.

August 10.—Germany signs an agreement at Berlin with the United States under which American

war claims are to be settled by a mixed commission composed of one member from each country and an umpire; the agreement is effective upon signature; Congress will not need to ratify.

King George completes formal ratification by Great Britain of the disarmament treaties negotiated at Washington (Japan and America have already ratified).

The World Court ends its first session at The Hague, having decided two labor questions; the Court will again convene in June, 1923.

August 12.—President Harding permits the unsealing of the Miami-Barbados cable between the United States and Europe through Brazil for thirty days during the emergency caused by capture of stations in Ireland, but objections from Brazil block the plan; the Radio Corporation of America, which also handles trans-Atlantic messages, reports a large increase in business.

Dr. Meliton E. Porras, delegate from Peru to Washington at the Tacna-Arica conference, sails for home (the conference agreed to submit the dispute under the Treaty of Ancon to President Harding).

August 14.—The Inter-Allied Council (the thirteenth such), at London, ends in disagreement on all points; nothing is accomplished on the pressing points of reparations reduction, war claims, and debt cancellation except to emphasize differences in viewpoint between the French and British premiers.

THE COAL STRIKE

July 15.—The United Mine Workers' policy committee rejects the President's proposal for a Federal Coal Commission (the anthracite mine owners had accepted).

July 17.—Striking miners (400) riot at Cliftonville, W. Va.; the Brooke County sheriff is killed, and there are many other casualties on the Richland Mining Company property.

The bituminous coal mine operators accept the President's Coal Commission plan for the most part, and he invites them to renew mining under State protection.

July 18.—President Harding requests Governors of twenty-eight States where coal is mined to suppress unlawful hindrance to resumption of mining operations.

July 20.—Pennsylvania and Ohio State guardsmen are mobilized to protect coal mines and miners upon resumption of operations.

July 26.—A commission is appointed by the President to direct the distribution of coal; its members are: Secretary Hoover, Attorney-General Daugherty, Secretary Fall, and Interstate Commerce Commissioner Aitchison; a fifth member will be named later as administrator.

August 2.—Governor McCray proclaims martial law in the Clay County coal-fields of Indiana, and sends State guardsmen to protect volunteer miners, who do not congregate in great numbers for employment.

August 5.—Mr. Henry B. Spencer, who is the new Federal Fuel Distributor, asks Governors of many States to coöperate in emergency measures for distributing coal fairly.

August 7.—At Cleveland, Ohio, a group of coal miners and operators confer.

August 13.—Negotiations are begun to settle the anthracite strike of 150,000 Pennsylvania hard coal miners.



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THE BURNING RUINS OF THE FOUR COURTS BUILDING IN DUBLIN

(Where Irish Republican insurgents made a conspicuous though unsuccessful stand early in the campaign of the Free State troops to put down armed opposition to the Provisional Government in Ireland. The destruction of this famous building with many important records is typical of the gutting of many others throughout the Free State; but with the firing of public buildings in Cork, where the last important stand was made by the Republican forces last month, it is hoped the turmoil is over)

August 15.—The soft coal miners of seven States are ordered to resume work in mines with 60,000,000 tons annual output; the Cleveland bituminous agreement is ratified; it resumes the former wage scale and working conditions and arranges a commission to find out the facts of the industry for the benefit of miners, operators, and the public.

THE RAILROAD STRIKE

July 19.—The Railway Labor Board announces that only the question of restoring seniority rights prevents settlement of the railroad shopworkers' strike; the men want reinstatement, but the railroads claim they have lost priority to faithful workers and new employees.

July 22.—William Allen White is arrested for alleged violation of the Kansas Industrial Relations Court law in displaying a placard voicing sympathy with striking railroad shopworkers.

July 25.—The Interstate Commerce Commission issues priority orders to the railroads in the emergency created by the coal and railroad strikes; food, feed, livestock, perishable products, coal, coke, and fuel oil take precedence over other commodities, in the order named.

August 1.—The President proposes settlement of the railroad strike on a basis of obedience to the Labor Board's decisions, withdrawal of strike suits by the roads, and restoration of shopworkers to employment with full rights of seniority.

August 2.—Railroad strikers accept President Harding's plan for restoration of seniority rights, withdrawal of all strike suits by railroads, and

agreement to submit to Labor Board decisions; the railroads accept the two latter points, refusing to restore seniority rights to the strikers over loyal men and recently hired employees.

August 7.—President Harding invites both sides in the railroad strike to get back to work and submit to the decisions of the Labor Board on the seniority issue and all other questions.

August 9.—More than 1,000 railroad union workers in train service walk out at Joliet, Ill., because of the "troop and guard menace" (the presence of deputy marshals and armed guards on railroad property); many others are restless at other points, partly because of the condition of train equipment.

August 10.—Santa Fé railroad trainmen notify the company they will not move trains through points where armed guards are employed on the property; trains are tied up in the desert and at other points throughout the West.

August 13.—The President's plan for settlement by return of shopmen and submission of the seniority issue to the Labor Board fails, the men refusing to accept.

OTHER OCCURRENCES OF THE MONTH

July 21.—Allan A. Ryan, of New York, files a petition in bankruptcy, owing millions more than his listed assets (he "cornered" Stutz motor stock in 1920 and was expelled from the Stock Exchange).

July 25.—Augustus Thomas, the playwright, is appointed executive chairman of the Theatrical Producing Managers' Association, a position similar to that occupied by Will Hays.

July 28.—A cable of the Brooklyn Bridge (New York) slips in its saddle, but can be fixed; all but horse-drawn vehicles had been prohibited from using the bridge since June 15. . . . Some city officials advocate building a new bridge at East 23rd Street, some a tunnel.

July 31.—More than fifty persons are made seriously ill, and six die, from eating poisoned pie in a New York restaurant.

August 1.—In Chicago, 25,000 street-car workers go on strike.

August 2.—The Chinese port of Swatow is completely ruined by a typhoon and a tidal wave which kill 50,000 and destroy the homes of 100,000 in the surrounding region; British and American aid is rushed to the scene.

August 4.—The Chicago street-car strike is settled, the men accepting an eight-hour day at 70 cents an hour.

August 5.—At Sulphur Springs, Mo., a Missouri Pacific express with steel cars smashes into a wooden-car local train, injuring 137 and killing 38 persons; only the engineer of the steel car express is killed.

August 6.—John D. Rockefeller donates \$60,000 for a library of Industrial Relations at Princeton University.

August 9.—Charles M. Schwab, of the Bethlehem Steel Company, buys control of Stutz Motor Car Company from the Guaranty Trust Company of New York, which had bought it at auction in bankruptcy sale of Allan A. Ryan.

August 11.—The American Bar Association,

meeting at San Francisco, elects John W. Davis, former American Ambassador at London, as president, to succeed Cordenio A. Severance.

Exports to Europe, the Commerce Department at Washington announces, fell off \$1,400,000,000 during the fiscal year ended June 30, 1922; those to South America decreased more than \$300,000,000.

OBITUARY

July 15.—Edward J. Wheeler, editor of *Current Opinion*, 63.

July 17.—Rev. Joseph Thompson Gibson, D.D., editor of the *Presbyterian Banner*, 78.

July 18.—Charles Ransom Miller, for nearly forty years editor-in-chief of the *New York Times*, 73.

July 19.—Rev. John Franklin Goucher, D.D., founder of Goucher College (Maryland), 79.

July 21.—Rev. Ferdinand Cowle Iglehart, D.D., author and prohibitionist, and widely known Methodist preacher, 78. . . . Mrs. Grace Strachan Forsythe, Associate Superintendent of Schools in New York, 59.

July 22.—Dr. Jokichi Takamine, noted Japanese-American chemist, who discovered adrenalin and takadiastase, 68.

July 25.—Djemal Pasha, former Turkish Minister of Marine, alleged instigator of Armenian massacres.

July 26.—Bishop John Grimes (Catholic), of Syracuse, N. Y., 69. . . . Mrs. Annie Robie Griswold, former actress, 60.

July 27.—Rev. John Preston Searle, president of New Brunswick Theological Seminary of the Reformed Church in America, 68.

July 29.—Judge Robert J. Tracewell, Controller of the Treasury from 1897 to 1903, 70.

July 31.—Rev. William Burgess, Chicago author and reformer, 79.

August 1.—Prof. J. J. Mackenzie, of University of Toronto, pathologist, 57. . . . Glenn Edward Plumb, railroad nationalization advocate, 56. . . . Harry Boland, Irish Sinn Fein leader.

August 2.—Dr. Alexander Graham Bell, inventor of the telephone, 75. . . . United States Senator William E. Crow, of Uniontown, Pa., 52. . . . Lemuel Phillips Padgett, Representative in Congress from Tennessee for 21 years, 66. . . . Frank Shelley White, of Birmingham, Ala., former United States Senator, 75.

August 3.—Dr. Charles Henry Land, noted dentist and inventor, 75.

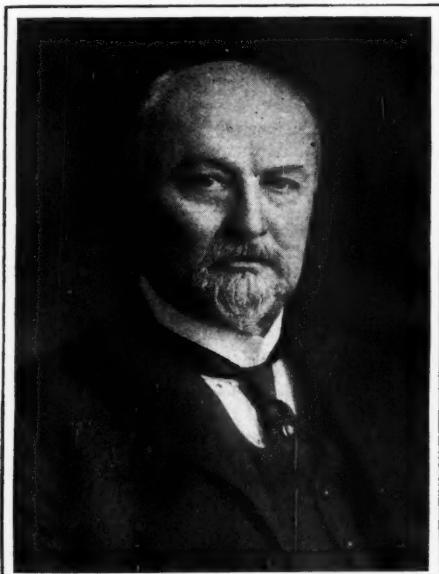
August 6.—Rear Adm. Uriel Sebree, U.S.N., retired, formerly Commander of the Pacific Fleet, 74.

August 11.—William Sloane, a well-known New York merchant, 50. . . . Major Thomas B. Ferguson, former Minister to Norway and Sweden under Cleveland, 81. . . . Merrill Edwards Gates, former president of Amherst and Rutgers colleges, 74. . . . Bishop John Carlisle Kilgo, of Southern Methodist Episcopal Church, former president of Trinity College.

August 12.—Arthur Griffith, President of the Dail Eireann and noted Irish leader and writer, 50.

August 14.—Lord Northcliffe, famous British publisher and journalist, 57.

August 15.—Prof. Howard Crosby Butler, Princeton archeologist, 50. . . . James Kennedy, poet and editor, 72.



THE LATE CHARLES R. MILLER, EDITOR-IN-CHIEF OF THE NEW YORK TIMES

(Mr. Miller was born in New Hampshire in 1849, and was graduated from Dartmouth College in 1872. After a few years' work on the Springfield *Republican*, he went to the *New York Times* in 1875, becoming editorial writer and editor-in-chief in 1883.)

THE PEACE OF EUROPE AND OTHER TOPICS, IN CARTOONS



ON THE RIVER OF TIME

ALARMED PASSENGERS (to France): "Sit down, for God's sake! You're rocking the boat!"
From the *Bulletin* (Sydney, Australia)



THE PREMIERS OF BRITAIN AND FRANCE
CONFER

("Look here, Poincaré, how can we ever get out of this if you persist in sitting on the key?")

From the *Star* (London, England)

LLOYD GEORGE'S AFFECTION FOR FRANCE

("Whoever says I don't love her is a liar!")

From *Le Rire* (Paris, France)

BROKE AND BANKRUPT—From the *Evening Express* (Cardiff, Wales)

GERMANY (to France): "I'm broke. I can't pay you."

FRANCE: "I shall go bankrupt if you don't."

JOHN BULL (to Uncle Sam): "And I'm paying too much interest, uncle! You've had a good picking out of us, and I think it's about time you took other interest in things!"

The European press continues to dwell upon the carefulness of Uncle Sam in looking after his international investments. The principal theme now is: If the United States would lend more—to Germany—or would cancel some of Britain's obligations,



UNCLE SAM AND THE DIPLOMATS OF EUROPE

"They assemble again in the desert and don't realize that without my money they can do nothing."

From Mucha (Warsaw, Poland)



UNCLE SAM: "OUI—I LEND TO HIM, HE PAYS YOU, YOU PAY ME BACK!"

From *l'Ère Nouvelle* (Paris, France)



THE OCCUPATION OF UNCLE SAM

From the *Amsterdamer* (Amsterdam, Holland)



ANY MORE SCRAPS OF PAPER TO BE TORN UP?

(There is a suggestion that Britain may cancel France's debts in order that France may lighten her reparations demands, and so restore economic conditions in Europe more rapidly)

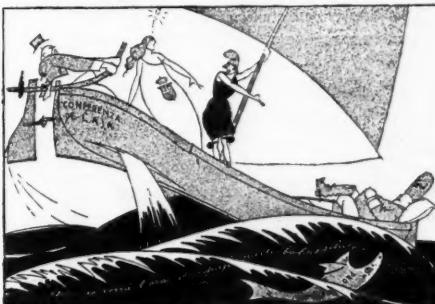
From the *Bulletin* (Glasgow, Scotland)

the financial reconstruction of Europe would begin. Such, at least, is their view.



AN AMERICAN LOAN IN THE AIR

From *Wahre Jakob* (Stuttgart, Germany)



RUSSIA AS A MODERN JONAH

THE ALLIES (BRITAIN, ITALY, AND FRANCE): "If we don't get him out of the boat, we shall all perish!"

From *Il 420* (Florence, Italy)



IN AMERICA

UNCLE SAM: "Look, children, when I shake the dollar they all dance!"

From *Nebelspalter* (Zurich, Switzerland)



POINCARÉ, LLOYD GEORGE, AND THE GOOSE THAT MAY LAY GOLDEN EGGS

From the *Westminster Gazette* (London, England)



WHY THE DOLLAR STEADILY RISES

From *Kikeriki* (Vienna, Austria)



THE CIRCLE OF PEACE—From *Il 420* (Florence, Italy)

PEACE: "The gentlemen amuse themselves; the rogues are always supposed to be in quest of me!"



A FLOOD OF GOLD

WILHELM: "Blood is thicker than water, but the \$250,000 honorarium for my memoirs is far more to me than the paltry income I get from Germany."

From *Wahre Jakob* (Stuttgart, Germany)



THE INTERNATIONALE AND THE GERMAN REPUBLIC

The Cry of the Workers: "Enough!"
From *De Notenkraker* (Amsterdam, Holland)



THOSE DOGGING FOOTSTEPS

THE WORLD: "I wish this beastly demon of war wouldn't keep dogging my footsteps."

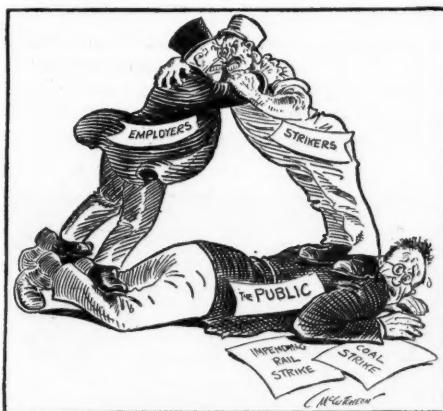
From the *South Wales News* (Cardiff, Wales)



A WELSH VIEW OF THE AMERICAN COAL STRIKE

THE AMERICAN: "Hi! Bud, I'll hire your auto; I'm getting plumb sick of waiting for those durn fools to quit handing out the rough stuff!"
THE TAXI DRIVER: "I thought he would sooner or later."

From the *Evening Express* (Cardiff, Wales)



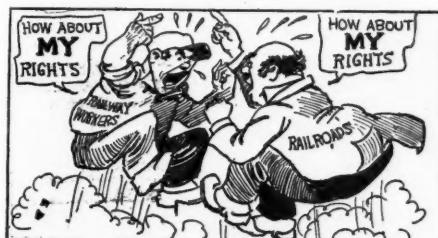
THE ETERNAL TRIANGLE

From the *Tribune* (Chicago, Ill.)



VACATIONING IS A GREAT SPORT—WHEN
SOME ONE ELSE CARRIES THE BAGGAGE

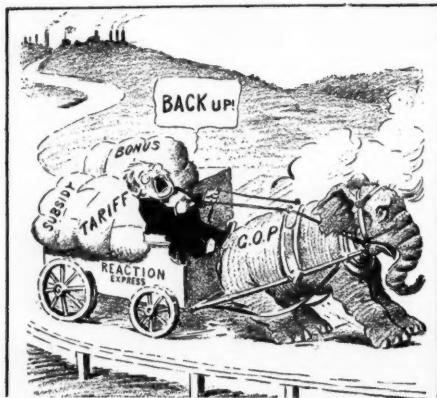
By Dorman Smith, in the *Press* (Memphis, Tenn.)



A QUESTION THAT IS BOUND TO ARISE SOONER OR LATER

From the *Bee* (Sacramento, Cal.)



HIS ROLE IN THE BIG MOVIE DRAMA—From the *News* (Chicago, Ill.)BACK, BACK, BACK—TO NORMALCY
By Nelson Harding, in the *Eagle* (Brooklyn, N. Y.)

The coal and railroad strikes continued to overshadow all other matters before the American public last month, although optimism had prevailed and solutions were confidently expected. But the Senate's uninterrupted debate upon proposed tariff changes kept that topic also on the front pages of the newspapers, even though the public may not have been intensely interested. A Republican tariff, in the making, naturally affords opportu-

OH! FOR THE SPIRIT OF '76
From the *Star* (Washington, D. C.)BURNING THE CANDLE AT BOTH ENDS
From the *Knickerbocker Press* (Albany, N. Y.)



CONGRESS BRINGS THE GAME HOME ALIVE—From *Collier's* (New York)

ity for Democratic newspapers like the *Dayton News* and the *New York World* to "view with alarm" its effect upon the average man and the price he will be obliged to pay for the necessities of life. And this opposition to the high rates of the pending

Tariff bill has not been limited to Democratic newspapers only; it has found expression in other quarters as well. In the cartoon from *Collier's* we are led to believe that Congress is not entirely satisfied with its accomplishments, in view of the approaching campaign.



SHEARING SEASON
From the *News* (Dayton, Ohio)



PULLING THE WOOL OVER HIS EYES

From the *World* (New York)
[It is claimed by opponents of the Tariff bill that the wool duties will add \$5 to the price of a suit of clothes]

EUROPE'S DEBT TANGLE AND AMERICA'S DUTY

BY FRANK H. SIMONDS

I. A NEW CRISIS

IN the past four weeks the subject of reparations has once more dominated all else in the foreign field. Not even a Greek threat to occupy Constantinople, which reminded the world of a still unsettled Eastern question, could even momentarily turn attention from the larger issue, which culminated in one more conference, this time in London.

Before this conference, however, the publication of a note, signed by the Earl of Balfour, but revealing all the clever political adroitness of Lloyd George, served as the point of departure for a fresh discussion of what has become the oldest peace problem, namely, reparations. In the present article I shall endeavor to deal once more with this question, laying emphasis on the position in which the United States has been placed by British diplomacy and the purpose of its maneuver.

It would be well if now, at last, after all that has happened in the past three or four years, Americans could lay aside, once for all, sentiment and sentimentality and see things as they actually are. The illusion that a new spirit has been breathed into diplomacy and that the national policies of other countries as they are conducted by their responsible statesmen are idealistic rather than practical, played hob with the Washington Conference and is largely responsible for the unpleasant situation in which we are now placed before the world.

What, after all, are the fundamental facts of the reparation problem and wherein lies our responsibility? At the Paris Conference the United States expressly resigned any claim upon Germany for payment growing out of our losses or expenses in the war itself. We resigned to our associates, who had suffered infinitely more and, in the case of France, Belgium and Italy, had undergone devastating invasion, our possible share in any payments by

Germany. In addition, our representatives joined with these countries in asserting the principle that Germany should pay for the destruction of property up to the limit of her capacity.

Having done this, our financial representatives undertook to establish the limit of possible German payment, and they decided that in round figures Germany could pay \$12,500,000,000—a sum Germany subsequently offered on several occasions to concede as just and a sum which was abundantly sufficient to meet the actual costs of reconstruction. It would then have been possible to collect this sum and it would have been possible with it to rebuild the ruins of France and of Belgium.

But this sum would not have allowed any considerable share to the British, whose territories had not been invaded. Lloyd George, moreover, had just made a political campaign in his own country and had promised on the platform to make Germany pay all the costs of the war, pensions as well as reconstruction. It will be seen that if the item of pensions were included in reparations, then, and only then, both Britain and the Dominions would have a claim to a considerable sum.

Our experts opposed the inclusion of pensions, both as a matter of possibility and as a question of right. Mr. Wilson himself insisted that under the terms of the Armistice this was not a just charge. But British experts testified that Germany could pay and could be made to pay and the French, Belgian and Italian representatives, naturally desiring to obtain as much as possible, followed the British lead. Thus our own representatives were outvoted and overborne. They yielded in the end as they had to yield, but our record in this matter is beyond question and our responsibility for later difficulties exactly *nil*.

In due course of time and in conformity with the Treaty of Versailles, the total of reparations was fixed at \$33,000,000,000,

which, together with payments in kind and restorations, brought the total up to some \$36,000,000,000, or, roughly speaking, three times the figure which the American representatives had regarded as right and possible. This ultimate fixation done by the reparations committee and in London in May, 1921, was accepted by the Germans, but only under duress.

Meantime the face of things had changed. The British had discovered that Germany, rather than pay the huge sums fixed, had elected to embrace fiscal bankruptcy, and had begun systematic inflation of her currency, which enabled her to undersell the British abroad, closed German markets to British exports, and produced enormous unemployment in Britain. France, moreover, in the face of a failure of German payments needed for her reconstruction, had threatened to occupy German territory, had indeed on one occasion occupied several German cities. This French military threat tended further to disorganize economic conditions and thus to injure British industry.

It was clear, then, that the whole Versailles affair had been from the British standpoint a colossal blunder and that there could be no real relief until German reparations figures were reduced to a point at which Germany both could and would pay and the threat of French military operations would thereby be removed.

All British policy from that moment of discovery onward, centered and still centers in bringing about the reduction of German reparations and the removal of the French military threat. But the solution has not been easy for the simple reason that in envisaging the obvious remedy, British statesmanship has undertaken to shift the whole burden of the expense to the shoulders of France and the United States.

To achieve this end the British have conducted a well-sustained campaign against French militarism for nearly three years and the Balfour Note, which I mean to discuss in a moment, is a deliberate attempt to saddle responsibility for present conditions upon American rapacity, in the hope that in the face of world disapprobation, America will give way and do what is necessary.

But I am particularly anxious, before getting down to the new situation, to make clear the ultimate responsibility. Had the British followed the totally disinterested

and accurate advice of our experts at Paris, the sum of reparations would then have been fixed at the figure which is now regarded as the maximum possible and the sum to which the present claims should be reduced. To do this they would have had to forego any claims for war pensions and this would have meant political difficulties for Lloyd George in the face of his rash campaign pledges, but the alternative was the world chaos which has resulted, and the persisting British economic depression.

Within a year after Paris, the British had discovered the truth and the discovery was embodied in the volume of John Maynard Keynes, which, while attacking all the persons responsible for the treaty, sought to solve all the troubles by the simple device of a cancellation of inter-allied debts, a process by which Britain would eliminate some \$8,000,000,000 of bad debts, Russian and Continental, and we would wipe out some \$11,000,000,000, of which at least \$5,000,000,000, the sum owed us by Great Britain, was unquestionably good.

At the same time, France was to consent to very large reductions in the sum total of reparations in return for cancelled debts. By this scheme reparations totals were to be reduced not to \$12,500,000,000, which our experts still regarded as possible, but to \$7,500,000,000, which was far less than sufficient to pay the costs of the restoration of the French devastated areas alone. All this reduction, however, would at once benefit British trade with Germany and lead to the prompt restoration of the German markets.

In point of fact Mr. Keynes went even farther and, in denying the Poles any share of Silesian coal, undertook to create a sort of Zollverein in Central Europe which would give Germany practical control of the Danube Valley and strangle the hopes and aspirations of the newly liberated peoples of Middle Europe.

The point to note is that at Paris the British demanded more than disinterested experts believed Germany could pay, because they wanted to share materially in the total sums, a thing which they could do only by inflating these sums. But after Paris, when British trade began to shrink and British statesmanship waked up to the true line of British interest, then Keynes and his school, which numbered Lloyd George in its ranks, undertook to reduce

the sum below what Germany herself said she could pay, because British interest lay not in sharing in reparations but in abolishing them in the interests of trade.

If you are to understand the progress of the reparations dispute it is essential to grasp the two positions taken by the British and appreciate the reason why the total was fixed so high. And it is equally essential to appreciate where, in the last analysis, the responsibility lies.

II. THE TRIAL BALLOON

Now the whole progress of this reparations dispute has turned upon the fact that British economic necessities required the restoration of the German market, but the salvation of France lay in the payment by Germany of the costs of reconstruction in the devastated area. What France has steadily insisted upon was that she should receive from Germany the costs of reconstruction plus those incident to the repayment of what she owed Great Britain and the United States.

As the debate has proceeded, the British have perceived that it was useless to expect France to reduce the German debt unless she were freed from her foreign obligations. The British have also perceived quite clearly that since Germany would not and could not be made to pay enough to enable France to pay Britain and the United States, it was essential to eliminate these debts, which in reality were only paper. A simple method of escape would have been for the British to cancel what they were owed by the Continent and also what they were entitled to in German reparations. This would have taken off at least a third of the impossibly high total.

But the difficulty with such a course lay in the fact that there was in addition a British obligation to pay the United States \$5,000,000,000 and British statesmanship, following the Keynes lead, devoted its efforts to advocating a general cancellation. Obviously, if once Britain cancelled what was owed her, she would have no transaction to propose by which she could be freed from what she owed us. At the same time all of the British press friendly to the Lloyd George régime carried on a campaign against France designed to force France to moderate her claims against Germany. All of these newspapers, too, at frequent intervals emphasized their conviction that

at the proper moment the United States would agree to a general cancellation, while the Government itself, for obvious reasons continued to assert that Britain would pay.

Meantime, however, the situation in Germany went from bad to worse, with corresponding effect upon British industry, while France on her part, overturning Briand, who seemed ready to yield to British pressure, turned to Poincaré, who had steadily insisted that Germany must pay and refused any French concessions which were not accompanied by British cancellations. Moreover, while the Washington Conference had measurably succeeded in isolating France and arousing American disapproval of French policy, the later Genoa Conference was a French success and enlisted for France the support of the Little Entente and Belgium.

Finally, we had quite recently the collapse of the mark following the assassination of Rathenau and the demand by the Germans for a prolonged moratorium. In a word, at last the crisis had arrived, but although it had come, neither France nor the United States had modified its attitude, and the British situation remained as difficult as ever.

At last, then, in the closing days of July we had a British maneuver. Poincaré had been invited to an inter-allied conference in London, and it was known in advance what his demands were to be. Accordingly, the proposal was put out in the British press from official quarters that Great Britain should cancel the debts owed her by all the Continental nations and either remit to Germany what was due on the reparations account or turn it over to France, and that with this transaction should go a far-reaching reduction of the sum total of reparations. In a word, Britain proposed, without further waiting for the United States, to do what lay within her power to solve the reparations problem.

This trial balloon was obviously intended to test two things: The attitude of the British public on the cancellation proposal and the attitude of the American public. The questions were whether the British public would at last stand for the deflation of the Lloyd George program of 1918 and whether the American public would respond to the British gesture by consenting to wipe out the British debt of \$5,000,000,000 owed to the United States.

Now it is clear that the American response

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was negative. In point of fact it is doubtful whether there was any wide appreciation in this country that something was expected of us. In any event there was not a suggestion anywhere of cancellation of the British debt. And it may be conjectured from later British events that British public sentiment was not favorable to the abolition of the paper claims which the British had upon Continental nations—and I call them paper claims because, like the similar debts owed us by the Continental nations, they will never be paid.

Lloyd George, then, found himself at last with an inter-allied conference in view, a conference in which France was bound to insist upon British cancellation as the first condition to French reduction of the total of German reparations, with an English public opposed to cancellation and an American public and government resolved to insist upon British payment. This is the situation out of which emerged the Balfour Note.

But at the risk of wearisome reiteration, I desire to point out again, since the United States has been put in the position of a responsible agent of British and Continental misfortune, that the cause of all the reparations trouble must be sought and found in the attempt of Lloyd George in the Paris Conference to fulfil his pledge made in the Khaki election, that Germany would be squeezed until the pips squeaked and made to pay the uttermost farthing.

The result was the inflation of German reparations by the inclusion of pensions against American advice. But having thus met his immediate political issue Lloyd George was very soon faced by the practical situation. Then he undertook to save his own and British interests by a prompt restoration of German economic prosperity, and to this end he ruthlessly sacrificed the interests of the newly liberated races of Central Europe, those of the French, and now he has come in the end to an attempt to exploit American sympathy with Europe so far as it exists and European feeling toward America, to coerce the United States into a contribution to the general scheme of German restoration to the end that British prosperity shall be restored.

The simple truth is that if some one else does not pay for the economic restoration of British markets, particularly the German, the British will have to pay themselves, and the last four years of Georgian statesman-

ship have been devoted to putting the burden of the expense upon France, upon the border states of Germany and Russia and, finally, upon the United States. To coerce the European states, notably France and Poland, American sentiment has been excited against Continental militarism. Now, to bring America into line, European sentiment is to be roused against us as the rapacious American creditor, whose insistence upon Shylock terms makes solution impossible and prevents a generous Britain from cancelling Continental obligations to her.

III. THE BALFOUR NOTE

We come now, logically, to the Balfour Note, which was issued just one week before the London Conference was due to assemble. This Note was identic, addressed to all the countries owing money to Britain as a result of war loans, and a copy was transmitted duly to our Government. It bore the signature of the Earl of Balfour, as we were told by the *Manchester Guardian*, because that statesman's recent negotiations had made him familiar to the American public, who would, as a result of their favorable impression derived in Washington, listen to him more willingly than to any other Briton. From this declaration we may conclude that the Balfour Note was intended for America quite as much as European attention.

In substance the note recited the evils of the existing situation and asserted that in the British mind the remedy lay in the complete elimination of all inter-allied debts by one general transaction. To such a procedure the British pledged their adhesion in advance. But—and the point was all here—no such transaction was possible while it could amount only to a British cancellation of European debts without any American cancellation of British debts.

To be sure, the American claims against Britain amounted to no more than a quarter of what Europe owed Britain, and Britain would never attempt to collect a penny more than what was necessary to meet American claims, which meant a scaling down of these debts. But Britain could not—in view of the courteous but firm insistence of the United States upon the payment of a perfectly legal claim—wipe out the debt owed her by her recent allies. In a word, since

the United States stood on its unquestioned rights, British instinctive generosity was repressed by a ministry bound reluctantly to defend the interests of the British taxpayer.

It would be hard to imagine a more astute note or one more cleverly phrased. It put the whole burden of responsibility for the continuance of European chaos upon American shoulders and it did it in such a fashion that not a few Americans, while by no means convinced, were, to say the least, bewildered. As to its effect upon a suffering Continent, that requires little or no explanation. The world, so the Balfour Note left us to understand, was condemned to struggle on in its misery until such time as America at last abandoned her materialism.

Yet again, what was the fact? Obviously that, unless British trade with Central Europe could be restored, British unemployment and contingent suffering would continue; that before this trade could be restored the German situation would have to be cleaned up, and the first step in the cleaning-up process must be the reduction of the total of German reparations which had been inflated by British statesmanship at Paris.

In offering to cancel twelve billions of debts owed her, if America would cancel \$5,000,000,000, owed by Britain, the Earl of Balfour made a handsome gesture, but in truth he was only offering to trade illuminated wall-paper against gold sovereigns. This is the case, because the only resources out of which the Continental nations can pay their debts to Britain must be sought in the reparations claims against Germany, and the whole purpose of British statesmanship is to reduce these payments in the interests of British world trade.

To announce solemnly that she would have to collect Allied debts to her, if the United States insisted upon British payment to it, was in fact announcing that German reparations would have to be maintained at the precise prohibitive figure which caused the trouble in the world, and primarily in British industry. This was true, because to insist that France pay meant merely to make France insist that Germany pay. Thus any attempt to obtain a moratorium or a reduction of German reparations to a possible figure would be doomed to failure in advance.

It is axiomatic that Britain cannot her-

self afford to accept German payments, because these can be made only in goods which would replace similar goods made in Britain and thus add to British unemployment. If, moreover, her debtors can pay her only as Germany pays them, also in goods, it is equally clear that Britain cannot afford to be paid by these debtors. And the debtors themselves insist that this is their only asset for payment.

It is equally axiomatic that Britain can regain her normal condition of economic health only when the German situation is cleaned up, when the German market is opened to British production, and German advantage in world markets eliminated by the stabilization of German currency. But the British themselves have been the first to emphasize the fact that cleaning up the German situation is impossible until the total of reparations has been greatly reduced. Yet here, in the Balfour Note, by insisting upon continental payments, the British are actually insisting upon the preservation of the total of reparations at an impossibly high figure.

Upon analysis, then, one is bound to conclude that the Balfour Note was something quite different from what it purported to be. It was, in fact, a deliberate and perhaps a final attempt to force the United States into a cancellation of what Britain owed it, while Britain still had paper claims against the Continent and could make a similar gesture—similar, to be sure, only in outward appearance, for as I have said we should sacrifice gold sovereigns against Britain's paper claims, equally good in law but not worth the costs of collection in fact.

In the last analysis, to restore the German situation the British will have to persuade the Continental nations to agree to a reduction of reparations. But this German restoration, while perhaps advantageous to all, will certainly profit the British far more than any other country. Therefore Britain will have to pay and her only means of payment is cancellation. This cancellation really represents no monetary loss, because the claims to be cancelled can be collected only with material loss to Britain. The point is that while she cancels these she will have to pay us and this means real money. If only we would cancel, too, the British would escape their own burdens and get the German situation cleared up to their great profit and without any expense to themselves.

The whole Balfour Note, as I see it, then, was a maneuver to procure the cancellation of the British debt to America. If it fails—and it patently has failed already—then the British will have to go back to the policy of the trial balloon, that is, they will have to undertake cancellation without further regard to their American obligations. And, sooner or later, in my judgment this is precisely what they will do. The Balfour Note was an attempt in advance of the London Conference to get rid of a heavy British incumbrance. But it was not a declaration of a settled policy, because, as I have tried to show, such a policy, one of collection of debts owed Britain, would mean the end of all chance of reducing reparations and of restoring British markets.

IV. THE AMERICAN CASE

As a result of the Balfour Note, however, we Americans are brought face to face again with the old question: Is it our duty to cancel? That it is a moral duty I cannot believe. It is not because of any superior morality on their part that the British, who insisted that the sum of reparations should be impossibly high, when they believed it could be collected, now argue that it should be so low that other countries will not get back the costs of repairing their devastated areas.

No, the British want reparations reduced because, contrary to the belief of Lloyd George in the Paris days and in conformity with the ideas of our representatives, collection has proved impossible and resulting chaos has brought terrible economic suffering to Britain. The British have undertaken to have it both ways, once with reparations high and now with reparations low, and they have done both things because in each case they have consulted their own interests.

In this situation it is our right to consult our own interests and the single argument which can be made for cancellation must be found in the effect upon American industry and trade of the two policies of cancellation and non-cancellation. If our case is that of Britain, if we should profit by the restoration of German markets and the abolition of that competition which results from the inflation of the mark, why, then, wisdom would call for concessions on our part.

But despite the British gesture in the Balfour Note it is very hard to see in practice how the collection of what the British owe us will affect the German situation, for the British can pay and will pay out of resources other than their German claims. Actually they have investments in this country sufficient to liquidate the debt, capital and interest.

The question of collection or non-collection of the British debt is for us purely and simply the question of whether or not we can afford to collect. Our experts say we can; our politicians say we must. The experts perhaps have more doubts than the politicians, but in any event it is clear that American public sentiment is against cancellation. Therefore, since there is no obligation the matter can and will rest there for the present and perhaps forever.

As to our loans to the European countries, to France, Belgium and Italy, here again we face the single question of American interest. We are not under any obligation, moral or otherwise, to cancel. This is true, however, only so long as we refrain from any attempt to interfere with French and Belgian collection from Germany, for we cannot at the same time insist that we be paid and that Germany be excused from paying. The only underlying security for our debt is the claim of our associates upon Germany as set forth in the Treaty of Versailles. If Germany does not pay France and Belgium, they are actually bankrupt; as for Italy, Giolitti tells us her progress toward that end is now beyond arresting.

If we refuse cancellation of French debts, the French will insist upon German payment of just this amount more of reparations. It may be that this insistence will lead to the final collapse of Germany, which carries with it the collapse fiscally of almost all of the Continental nations, our debtors. If this collapse represents an American disadvantage, then we should cancel the debts of our continental associates. Otherwise we can sit back and mind our own business.

In my judgment unless there be a great reduction in German reparations there will be a general European collapse and such private advices as I get from Europe seem to indicate that this is now likely in any event. Of course, if it does come, then our claims upon European countries disappear in the general bankruptcy. In the same

fashion I agree with the familiar assertion that reduction of reparations cannot be achieved without the cancellation of loans.

This does not, however extend to the case of the British debt to us. Britain will not be bankrupt if she pays; we shall not be ruined if we accept payment. The British cannot insist upon German payments to them, if we insist upon British payments to us, because the British cannot afford to take German payments and must have reparations reduced if their own conditions are to be remedied. Therefore our collection of the British debt cannot actually have any bearing upon the German situation. In so far as the Balfour Note undertook to establish such a connection, it only resorted to the good old American method of bluff, which, if one may judge from the American response, has been "called."

Personally, I believe that the United States and Great Britain, without prejudice to mutual obligations, should agree to the wiping out of their claims against their continental associates and thus impose a sweeping reduction in the sum of German reparations, because I believe that the restoration of the German market, which might result, would be more profitable to us and to the British than any payment of debts which is likely could possibly be.

The first step, however, should be taken by the British, for their interest and prospective profit are infinitely greater than ours. Once they have cancelled and achieved a proportionate reduction of German reparations it will be possible to judge how much more is necessary. But as long as the British use the whole indebtedness situation as a basis for attempting to maneuver us into a cancellation of the British as well as the other debts, nothing can be accomplished and nothing will be accomplished.

The chief voice of the Balfour Note was that it made appeal to the same sentimental elements which have bedevilled the reparations and Allied debts questions from the beginning. In point of fact no nation in the whole war and peace period has either through its government or through private channels displayed such generosity either to its friends or its foes as has the United States. During the war we gave without stint to our associates, in the making of peace we urged without limit that moderation be displayed both in the interests of the victor, the vanquished, and world peace.

But when Mr. Wilson was urging moderation, Mr. Lloyd George was telling the British public from the stump that he was going to hang the Kaiser and make Germany pay the uttermost farthing of cost of the war to the British taxpayer. The seed of all resulting evils was thus sown. It is not because the United States asks the British to pay what is acknowledged as an honorable debt that Europe is in a mess or British unemployment what it is. It is because Lloyd George promised the British public billions of reparations and undertook to make such a peace as would seem to fulfil his pledge.

Our associates in the war acquired territory and other valuable things; we asked nothing and got what we asked for. The British share of the territory acquired was by far the most impressive, as were its acquisitions in such material things as enemy merchant vessels. If, notwithstanding these gains, they cannot pay—and Italy, France and Belgium cannot, save as Germany pays—this is a question which must be dealt with from a reasonable standpoint. But if Britain can pay, then it is hard to see why we should have to choose between forgiving her debt and accepting responsibility for a world situation resulting from the policy of political expediency pursued by Lloyd George at the Paris Conference in the face of American advice and even appeal.

I have discussed this question with some frankness because it seems to me that once for all we should get rid of the carefully fostered notion that we ran away from our associates in the war and left them, crippled as a result of our going, to face a shattered world. In point of fact we did nothing of the sort. Our withdrawal did not take place until long after the end of the real fighting and we did not go until we had done more than any other country toward the restoration of peace conditions. That withdrawal did not in the least produce present conditions; they are due to the political maneuvers of Paris and primarily to the policy of Lloyd George.

The difference between British cancellation of Continental debts and our cancellation of British debt lies in the fact that British cancellation helps British trade and industry, while our cancellation merely deprives us of money which can be paid with no obvious return save possible moral exaltation. The other essential difference

derating the situation. It was the German loss of the war which seed the world's present trouble. It is the British who are to blame as an ally of Germany. It is the British who took the world's responsibility for the world situation because we will not wipe out the British debt.

Neither American rapacity nor French militarism is responsible for the present German collapse. It is not even due to reparations payments. The Germans have themselves deliberately sought fiscal bankruptcy by currency inflation to escape payment of reparations and they have so far made only insignificant payments, which could not explain the decline of the mark. But it is now agreed by all experts that the sum of reparations was fixed far too high and that it is beyond German capacity to pay. It must, therefore, be reduced to the point where payment is possible and, since German deliberate bankruptcy now precludes all immediate payments, Germany must have a moratorium. But this reduction and this moratorium will be without beneficial effect if some method is not found to force the Germans to abandon their present tactics and undertake honestly to meet obligations which are within their known capacity.

The British, whose obvious interest lies in the restoration of the German market and even more in the stabilization of German currency to prevent German underselling in the world markets, are eager to have the sum of reparations reduced as much as possible without regard to anything else. They cannot afford to take German payments and they are properly and naturally more interested in getting rid of their own unemployment than in seeing their recent allies collect German indemnities.

The French, on their side, are not in the least interested in the German market or in British unemployment. They must have German payments or they are bankrupt and saddled with huge burdens for an indefinite future. Therefore they insist upon German payment, and, if a moratorium is to be granted, that it be accompanied with such control of German finances as will arrest present inflation and make ultimate payment possible. They, too, insist that if Britain is to benefit mainly by the reduction of reparations totals, then she must in return agree to the cancella-

tion of French debts. Nor will the French agree to any reduction of the total of reparations which saddles France with the costs of reconstruction of the devastated area or the payment of British and American loans.

This is the basis of the argument which opened with the coming of M. Poincaré to London; roughly speaking, these are the two interests which came into collision once more, as in all recent international meetings. The French, like the British and all other Europeans, would be overjoyed if we would agree to cancel all debts and thus allow a wholesale reduction of German reparations. Even the Germans would rejoice at this, but failing this and failing British individual cancellation, France indicated her determination to hold Germany to payment without regard to the effect upon British trade or industry, just as we mean to hold the British.

I have dwelt upon this phase at great length because, like every other American, I resent the attempt in the Balfour Note and in previous utterances of Lloyd George to make it appear that the United States is responsible for world misery and our insistence upon British payment of what is owed us in marked contrast with British policy toward her debtors.

The real facts should not be clouded in any American mind. We have no responsibility for the present situation and no obligation, when every other nation is following its own legitimate but naturally selfish interests, to sacrifice our own. Least of all is there any reason why we should be stampeded into unreasoning prodigality by any such maneuver as the Balfour Note.

V. THE LONDON CONFERENCE

It remains now to discuss the London Conference, the next step in international negotiations concerning the German problem. The occasion of this latest but probably not last of these conferences growing out of war and peace problems was the German demand for an extended moratorium. To meet this situation Poincaré journeyed to London, and Belgium and Italy were also represented.

On the eve of this conference, however, two things had occurred which materially changed the outlook. The Balfour Note had removed the immediate possibility of any large-scale solution based upon cancellation of inter-allied debts. Poincaré had

planned to bring a fully worked-out scheme in which French concessions in the matter of moratorium were to be matched by British concessions in the matter of French debts. This plan disappeared with the Balfour Note.

In response to this British gesture, however, Poincaré had served an abrupt and peremptory notice upon Germany in response to the German request to be allowed a moratorium also, on payments growing out of German business debts to France which had not been liquidated prior to or during the war. The French answer was a refusal and a number of summary steps to enforce German payment, such as the seizure of German balances in French banks and the threat of the expulsion of German citizens from French soil and particularly from Alsace-Lorraine, where many still remain.

This French gesture, following the British, was interpreted quite exactly the world over as a new warning that in case the London Conference took a turn unfavorable to France, France would resume her freedom of action and would act with respect of Germany without regard to the course followed by her associates, and particularly by Britain.

These two closely related incidents cast a shadow over the London Conference in advance, nor did the following days, which saw the first meetings, dissipate it. At the outset M. Poincaré presented a complete scheme for the control of German resources. This elaborate proposal was based on the assumption that Germany was a bankrupt seeking to evade the payment of just debts. It sought to impose a variety of checks, including control of customs, creation of new customs barriers, participation in German corporations.

You had in this proposal the French conception clearly expressed: that Germany would not pay unless compelled and that means must be taken to compel her to pay. You had again the demonstration of the fact that the objective of France was to obtain payments, and any consent to a moratorium was predicated upon some agreement as to ways and means to make the moratorium a means of enabling and compelling Germany to pay, not to escape payment.

The British on their side, supported solidly by the Italians, whose share in reparations is small and whose need for German commercial relations is almost as great as

British, and in part by the Belgians, whose interest is also small and protected by priority pledges, argued that the French scheme, so far from permitting Germany to get on her feet, merely continued the German payments in another form. But the Belgians sharply dissented from the British in certain details and backed a French proposal for the control of the Ruhr.

In a word, the British again insisted that the solution was the restoration of trade, which they needed, that is, the rehabilitation of Germany unconditionally, while the French argued against any German restoration which did not at once insure payments to France. Thus, from the very outset, the deadlock which had obtained for more than three years was once more established at London, and the divergence between British and French policies and interests was revealed as still too great to permit of any compromise.

In truth the impression of these early days—and I am writing on Friday, August 11—seemed to be general that the British and French attitudes had both hardened, that Lloyd George with a general election in mind and Poincaré with a censorious Chamber behind him were both prisoners of their domestic political conditions, and each had his eyes actually fixed upon his home-front while he seemed to be engaged in a discussion of foreign affairs.

Threats and warnings of a speedy dissolution of Entente flew round the corridors as usual and the settled judgment of all experienced observers seemed to be that France and Britain were further apart than ever. On the whole this was only a natural consequence of the Balfour Note, for the French have all along insisted that French payments to Britain and the United States were contingent upon German payments to France and French agreement to a reduction of reparations totals contingent similarly upon British and American concessions in the matter of French obligations.

Warnings of French bankruptcy and indeed of a general Continental collapse were similarly heard on all sides. Indeed the most optimistic forecasts were concentrated upon the possibility that a brief moratorium would be allowed Germany and the Conference would adjourn without a break to some later date, following the precedent established when certain failure at Genoa was avoided by an agreement to meet at The Hague, where, to be sure, the completeness

of the Genoa failure was at last made manifest.

Before this article reaches the reader the final stages of the London Conference will have been passed, and I shall not attempt here to discuss the probable outcome. Americans, however, will do well to follow the next few weeks of British policy with the full foreknowledge that a British General Election is at hand, and that the primary concern of British leaders must be to look after their domestic fences, whatever the consequences in the foreign field.

Now the British situation is, in a measure, like the French and the American. The Frenchman sees that if the German does not pay, he will have to bear the burden of Allied debts and of his own reconstruction. The Englishman sees that if he cancels European debts and America does not cancel his, he will have to carry the load. Finally the American sees that any general cancellation scheme will in the end put the load on his own shoulders.

It is quite plain, then, that no ministry responsible to the country under democratic institutions can face its electorate with a proposal to accept the burden. Poincaré, Lloyd George, Harding—the situation of each is the same. If all three knew that a material sacrifice was necessary to permit any escape from a world catastrophe, it is unfortunately true that popular feeling in the matter has been so aroused that it would be political suicide to advocate making the necessary surrender.

The result, as I see it, must be ultimate disaster, for so far as Europe is concerned, at least, there can be no settlement without a drastic reduction of debts and of German reparations. As for the United States, we shall not be able to collect anything but the British debt in any event. Without compromise there is no chance that British trade will be restored or that France will receive any considerable reparations. Britain may be able to bear her burden, although the strain will be terrific. For France and Italy and probably Belgium, only bankruptcy can result.

As for Germany, the deadlock between France and Britain prohibits any financial

assistance from the outside, any international loan, while the threat of French military operations will grow even more imminent if London ends in nothing but a new disappointment for France. In the end the process of inflation can lead only to a financial and economic crash, and Germany has no present health to endure such a strain as would inevitably come.

One consideration, however, my American readers must also keep in mind. Adjournment at London without a break would almost certainly be followed by a combined effort on the part of all European nations to bring about a new Washington Conference to deal with reparations and Allied debts, for by this means Europe still hopes to persuade America to make that gesture which alone offers the way to easy and, for Europe, inexpensive escape.

In the next few months Mr. Harding and Mr. Hughes will be offered a new chance to assume moral leadership in the world, and in another international conference in our own capital bring real peace to a troubled world. But it should never be mistaken that the single condition to be met will be American cancellation of all of the loans made to our Allies, the British as well as the Continental. Unless we are prepared to meet this condition, even a Washington Conference would be foredoomed to failure.

I shall reserve until next month comment on the Greek situation, called to world attention by the Hellenic threat to seize Constantinople and the characteristic speech made by Lloyd George following that threat. In all probability the Greek menace was no more than an attempt to force a favorable solution of the Near Eastern muddle upon the great powers and all solution, in any event, must wait upon the adjustment of Anglo-French disputes, for the true cause of the Near Eastern trouble is discoverable in rival British and French aspirations in the Eastern Mediterranean. If ever there is a settlement of the German question, Near Eastern difficulties will be ironed out with small delay. And, conversely, as long as Britain and France are at odds, their diplomacy will clash on the Hellespont just as much as on the Rhine.



COAL FOR THE HOME

FACING A SHORTAGE

BY GEORGE OTIS SMITH

(Director, United States Geological Survey)

A COAL shortage has at last come home to the general public. To blame the general public for a considerable share in all that has led up to the present condition of coal yards and coal bins may be ungracious but it is not unjust. In the months before the coal-mining stoppage—to use the polite British term for strike—when that action by the mine workers was almost certain, and for at least three months after April 1, there was a remarkable lack of public concern about coal. When coal could be bought the consumer optimistically thought of lower prices in the fall, and he received gladly some poor advice from equally optimistic dealers. The average citizen cannot seem to get thoroughly warmed up on the coal question until he begins to get chilly, but unfortunately that time of feverish interest in coal for the home is now close at hand.

Only about 20 per cent. of the 500,000,000 to 650,000,000 tons of coal used in this country of ours is consumed directly in our homes. The rest of that great tonnage, which represents from 40 to 45 per cent. of the world's annual coal pile, is used to turn the wheels on our railroads and in all our industrial plants and to smelt our ores. Thus the measure of the visible demand for coal by the 105,000,000 inhabitants of the United States is only 100,000,000 to 120,000,000 tons. But to the householders themselves this domestic demand is what counts for most—next winter's coal is an issue that every one of us can understand.

Yet the recent order issued by the Interstate Commerce Commission ranks domestic use below some other uses, giving priority in shipment to coal for the railroads' own use, for the public utilities, and for public institutions. This subordination of what may seem an absolutely essential demand for coal is justified by the obvious fact that our railroads must be kept running, to carry the coal itself as well as foodstuffs and all the other necessities of modern life; and the public utilities are the other preferred customers

because they too perform for the whole people service that cannot be interrupted. The demand for coal for the railroads and public utilities may be less visible to the average citizen than his own requirements, but his Government has to recognize its claims to priority.

The coal that goes to the railroads and public utilities and to the industries is practically all bituminous or soft coal, but the coal that is preëminently the household coal is anthracite; and a shortage of anthracite is what the public faces as summer passes. The nearly five months of idleness in the anthracite mines of eastern Pennsylvania means that 20,000,000 or 25,000,000 short tons of domestic sizes of hard coal have not been mined that are usually mined in those months. Unlike bituminous coal, which has been described as almost a free gift of Nature to a majority of the States, anthracite is practically confined to an area of less than 500 square miles in a single State, and these coal lands are held by relatively few owners. Furthermore, only a few companies mine anthracite, a group of eight companies producing 72 per cent. of the output. This natural monopoly has thus resulted in a well-organized industry, in which the mine capacity and mine labor force are fairly well adjusted to the public demand for the product, as indicated by the fact that in the last five years the hard-coal mines have shown little variation in output, while the soft-coal mines have experienced excessive variations from year to year.

The over-development of bituminous mines—which is so largely accountable for the unrest of mine labor due to unemployment—will, however, make it possible for much of the deficit in soft coal to be made up when once those mines are running full time; but the less wasteful and better adjusted mines in the anthracite region have no surplus capacity. Hence these 25,000,000 tons of unmined anthracite coal must be counted as lost to this year's consumers. Every available ton of the "pea" size of

anthracite should be purchased for range and furnace use. The inability of the anthracite mines to speed up much to supply the active market of the coming winter is shown also by their better working year, an average of 272 days last year as compared with less than 170 days as the average of the bituminous mines of the country. A shortage in anthracite is therefore inevitable.

At best, even with a steadily increased output of bituminous coal, its effective distribution will be difficult. The task put upon the coal mines and the coal carriers is the double one of meeting current demands and filling empty bins, and this at a season when crop movement taxes the railroads to the limit of their equipment. Then, too, the belated movement of coal by water to upper Lake ports both endangers the winter's supply for the Northwest and draws coal from other channels until navigation closes.

Under normal conditions half the coal used for domestic purposes in the United States is bituminous coal, although most of our Eastern-born citizens know only anthracite until they discover that extensive part of the United States which lies west of the Alleghanies. Elsewhere in the world soft coal and lignite—often in the form of coke or briquettes—are the mineral fuels almost universally used. The stringency in anthracite may force many to substitute for it the dirtier and smoky soft coal; and this new demand will put an added burden on the bituminous mines, many of which already produce sizes of coal specially adapted for household use. Many of us may be glad indeed to get bituminous coal to burn this winter.

Other substitutes for our luxury fuel, anthracite, are wood and coke. A supply of fire-wood sufficient to replace coal for household use can no longer be had even in New England or in the Lake region, the two regions farthest removed from the coal fields; for fire-wood is too expensive in terms of labor, and indeed in the cities hard wood is itself a luxury fuel, more aristocratic than anthracite. This winter, however, more wood than usual should be used in our homes, and the wise householder will seek to eke out his coal supply with wood wherever it is obtainable.

Scant supply and high prices are not without some benefit—they teach thrift. The unprecedented high prices for soft coal that began during the war have opened our eyes to the advantage of getting more heat out of

the coal we burn, and boiler-room efficiency has been increased in a gratifying degree. Yet we are only on the threshold of fuel economy; we simply burn coal rather than fully utilize it. The by-product practice of the future will substitute for the burning of raw coal in home or steam plant the use of either coke or gas, the other products from the coal having first been extracted to furnish fuel for our motor cars, dyes for our clothes, surface for our roads, and even drugs for our aches and pains.

Carbonization of soft coal, saving the by-products now usually wasted, delivering the gas and briquetted residue to the householder, and teaching their most efficient use, together make up one of the present-day challenges to the ingenuity of the American engineer. Coke is a clean, smokeless, slow-burning fuel, thus possessing the advantages of anthracite at lower cost. Whenever available this winter it should be used by the householder, who should seek advice as to how to burn it properly. Eventually bituminous coal, made smokeless and clean by treatment which saves its other products, must replace anthracite in the home.

Even in normal times the small consumer of coal needs to help in stabilizing the coal market, and this year the need is urgent for unselfish coöperation in reducing the panicky condition of the retail market. *Don't shop for coal.* Every effort made to obtain coal from any other than your regular dealer serves to multiply the apparent demand for coal. Even your telephone inquiry of five dealers converts your ten-ton order into a fifty-ton demand.

The steps already taken by the Federal officials to keep coal prices within bounds can be effective only as State and municipal authorities exercise their police powers over the price of coal as an indispensable commodity. And the consumer himself must refrain from tempting speculative dealers to indulge in devious practices to get the coal. "Bootlegging" in coal will be fashionable this winter only as the consumer stoops to bribery and thus defeats public efforts at price control.

The public should realize that it costs more a ton to produce and sell coal in a year like this, when abnormal overhead expenses have to be prorated against a reduced tonnage. Since April 1, "maintenance" work in the anthracite mines has involved a labor cost estimated at one-eleventh of the regu-

lar payroll, and no coal mined. The anthracite operators who normally hoist from their mine workings eleven or more tons of water to every ton of coal, have for months had to continue to pump those eleven tons of water without getting the ton of coal to sell.

However, in these days of social and economic enlightenment the powers of government backed up by active and outspoken public opinion should resist every effort to have either the mine price or the retail price of coal determined by its scarcity. The sacred law of supply and demand is apt to be invoked by the individual more often than is necessary for the welfare of society,

and the general public may well set up its right to buy coal this winter at a price based on actual costs and fair profits. But too often it has been the complaining consumer himself who has bid up coal to new price levels. The private purchaser should co-operate with the regulatory commissions he asks to have appointed, and he should insist on the selection for these positions of business men who are efficient as well as public spirited. For too many years has the general public dodged its responsibility in the coal business, and now we begin to see clearly that coal production is a national issue and coal distribution a local issue.

AMERICA'S COAL INDUSTRY

BY GEORGE H. CUSHING

(Former editor of the *Black Diamond*)

THE coal industry has been in a bad predicament all summer. It has reminded me of an automobile owner who neglected the warning sounds in his engine until it broke down on a deserted road far from home. Things have been going wrong in the coal industry for a long time. The making of needed adjustments has been postponed too long. Now, it looks like a rebuilding job.

Operators have created enough mines to produce upwards of 900,000,000 tons of bituminous coal per year. They have a demand for less than 600,000,000 tons per year.

Enough miners are employed to produce all the bituminous coal the country needs in 200 working days each year. They must live 365 days a year. President Harding says that they should work at least 280 days a year.

Non-union bituminous mines can produce one-third of the nation's coal at costs substantially less than those of the union mines. They cannot expand their production to supplant the union mines because they are too far away from the important markets. But they can quote prices on the fringes—and sometimes in the heart—of the big market which are so low as to reduce the prices brought by union coal to actual cost of production or even less.

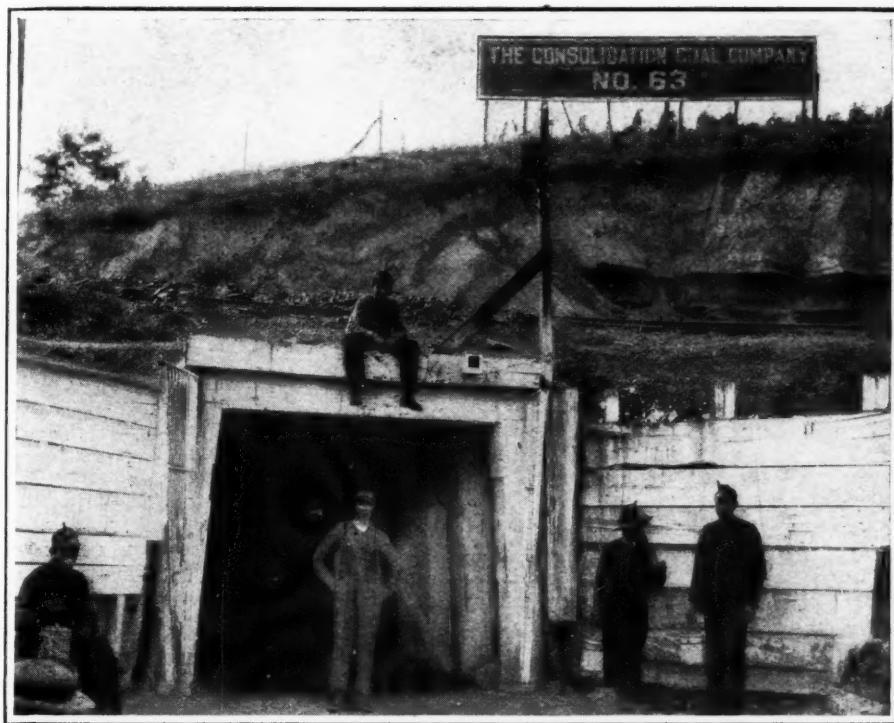
Union mines cannot meet this competi-

tion; they cannot get rid of the union; they cannot, lawfully, assist the union to organize their competition; and they cannot avoid bankruptcy if things continue to run on as they are.

The union, having become responsible for the welfare of some 600,000 men, cannot abandon them in the midst of a fight. It cannot accept the non-union scale and still justify its dues. It cannot consent to allow its members to work only 200 days at the same pay as other workers earn who have work during 275 or more days in every year.

In anthracite, the situation is quite different; in fact, almost the reverse. The newest mine in that field is nearly seven years old. Many of the old mines are being worked out. Production is about at the peak and is not large enough. The population in the East, which has built its houses to use anthracite only, is steadily increasing. This means a constantly growing demand for that coal. Production having reached the peak, but consumption increasing steadily, there is but one thing for the trade to do—it must withdraw from some markets in order to satisfy others. Thus the sale of anthracite in the Middle West is constantly less that the needs of the crowded East may be met.

Thus there is not enough—if any—competition in anthracite. It is too early yet



THE ENTRANCE TO A COAL MINE

to make the statement positively, but it has seemed for the last five years that anthracite has reached the stage where it was a matter of rationing rather than of selling that coal. This gives the impression of a monopoly and of arbitrary prices so high that the business must be extremely profitable.

If the industry were as profitable as it seems, more men would naturally want to get into it; those who are in would want to produce enough coal to satisfy all of the demand rather than merely a part. The fact of fixed production must indicate that for some reason expansion is discouraged. The truth is that land values are so high as to discourage either purchase or lease. Costs of production—due in part to the extreme refinements of preparation—are so high that the public complains against them. Top works are so expensive that they cannot be "written off" in the life of an ordinary mine. When old acreages are worked out it is next to impossible to get adjoining acreages which can be worked through the same plants. Finally, com-

peting fuels are making great inroads upon the anthracite markets, or will surely do so if costs are increased. That is, those who now use anthracite are being solicited constantly to burn coke, fuel oil, smokeless coal or some of the new patent fuels.

The mine workers in anthracite, believing that high prices mean necessarily large profits, have demanded a great increase beyond the war wages. They struck when those demands were rejected.

The affairs in both the anthracite and bituminous divisions of the industry came to a focus at the same time. While they were boiling, there rose to the surface also the economic disarrangements in the entire industry. While men were quarrelling over wages and disagreeing over solutions of the economic problem, the mines were allowed to close down until it is now impossible to produce enough coal to allow the country this coming winter to do business as usual. At that point the Government had to step in. Its primary concern, of course, was to get coal for the people. It could not ignore, however, those dislocations in the industry

which, periodically, were bringing clashes between the miners and the operators and which finally brought the country to the brink of civil war.

We all want to know what can or should be done about coal. It is not a solution to apply to it the ill temper of a man on the street corner who has no responsibility for anything and only a command of strong language. The questions are: What would we do if we were responsible financially for the two billion or more dollars invested in bituminous coal and another very large sum invested in anthracite? What would we do if we were in the shoes of Mr. John L. Lewis and were held responsible for the welfare of 600,000 workers who have elected him their leader and spokesman? What would we do if we were President Harding, who must see that the people who need coal shall get it; who must recognize the sovereignty of the separate States and still exercise federal influence therein; who must protect every man who wants to work without depriving somebody else of the right to make a living by the thing which he has trained himself to do?

It is not a simple question. I have no solution which, in this connection, I propose. All I am deputized to do is to put down, in a series of sketches, pictures of the facts in such a way as to explain what the real situation is and where the disorder sprang from.

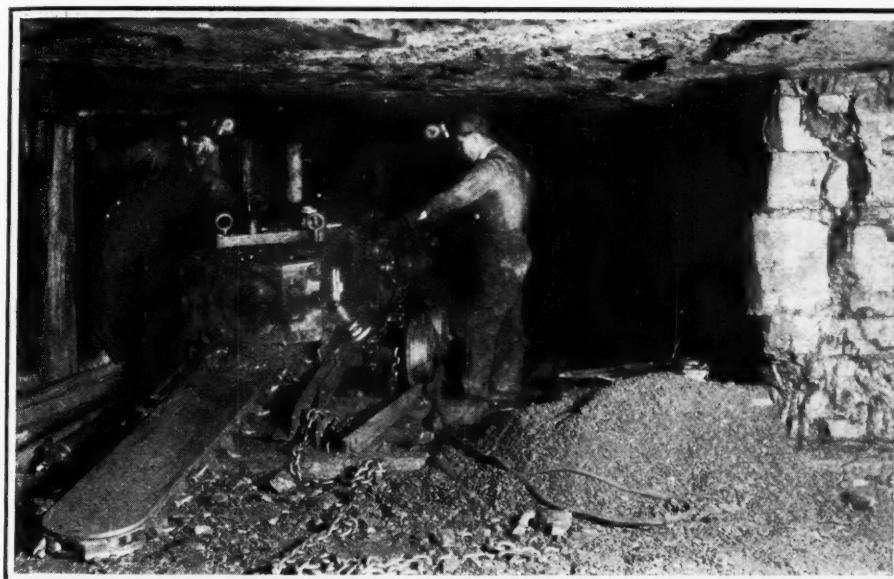
Methods of Mining

A congress of geologists held in Toronto some ten years ago compiled statistics which disclose the fact that America has about 52 per cent. of the coal reserve of the world. Our own figures are that it is produced in quantity in twenty-six States. We have so much coal that, if it were all confined in one seam five and a half feet thick, it would underlie an area comprising about 775,000 square miles.

As coal actually occurs, our supply is broken up into deposits which are extremely irregular. In one place in Wyoming, for example, two seams unite to form one body of coal eighty feet in thickness. In the anthracite field, we have the Mammoth seam, which is fifty feet thick. On the contrary, in places in Pennsylvania and West



A MODERN COAL-MINING MACHINE THAT CAN UNDERCUT 200 TO 250 TONS OF BITUMINOUS COAL A DAY—EQUIVALENT TO THE WORK OF TWENTY-FIVE MEN



MODERN MACHINERY IN AN ANTHRACITE MINE AT SCRANTON, PA.

(Showing how the roof must be held in place by heavy timbers in the anthracite field)

Virginia, coal is found in seams but a few inches in thickness.

Also our coal lies in all possible positions. In the valleys of the Ohio and Mississippi rivers the coal is found, at varying depths below the surface, in practically a horizontal position. In those districts the veins are quite uniform as to thickness. In Oklahoma, the coal lies in saucer shape—horizontal for the most part, but turned up sharply at the edges of the field. From those ideal conditions the "pitch" of the coal varies through all degrees from the horizontal until in places it all but reaches the vertical. The extreme irregularities are found in the anthracite fields of Pennsylvania and in the State of Washington.

Geologists say that originally the anthracite deposit was in a horizontal position. After it was in place it was disturbed by what they call the "continental thrust" of prehistoric times. That is, there was some great disturbance of the earth which reached to considerable depths. It had about the same effect as a collision between our Atlantic seaboard and some other great force of equal size and extent. The result was that the regularly formed coal measures were twisted as badly as are the frames of railroad cars by a wreck. The anthracite measures in consequence are found in all

degrees of deviation from the horizontal to practically the vertical.

In the State of Washington, coal operators have started to pursue a horizontal vein of bituminous coal into the mountain only to come shortly into a wall of earth or stone. Efforts to locate the "lost" coal seam have resulted in its relocation at distances above or below the original position ranging from a few feet to more than one hundred feet. These "faults" are said by geologists to be due to the occurrence of volcanic action in those districts in prehistoric times.

Between the extremes represented by the regular formation in Illinois and the extremely irregular formations in the anthracite fields and in the State of Washington, there is the more or less regular pitch or strike of the veins found on the western slope of the Appalachian range. This is best illustrated by the well-known Pocahontas seam of southern West Virginia. This vein outcrops on the crest of the Blue Ridge Mountains at a point immediately west of Bluefield, where it reaches the extreme thickness of eleven feet. It pitches downward toward the northwest so sharply that it passes under the water-line at Williamson, W. Va., which is less than twenty-five miles west of Bluefield. Geolo-

gists say that this vein of coal extends to Pittsburgh, and that the pitch is so sharp that at that point it passes under the bed of the Ohio River at a depth of several hundred feet.

In West Virginia some fourteen veins of coal are found superimposed. They all pitch regularly and in about the same manner as the Pocahontas coal.

The coal operator comes upon these veins in the valleys through which the railways and the rivers pass. The valleys are merely cuts of varying depths into what was originally a plateau. The depth of the valley determines which seam of coal the operator finds upon his land. In most instances he does not know which vein he is working until he has advanced into it and until his geologists have been able to study the strata immediately over and under his vein.

Mining methods must vary with the conditions found in the mine. In Illinois, for example, the operator can sink his shaft to his coal and begin in orderly fashion to lay out his workings. He knows that there is hardly a chance that his original plans will have to be changed until the land is entirely worked out. Indeed, the Illinois operator is so sure of his ground that one of the biggest mines in the State was laid out on the theory that the "entries" would be driven to the boundary and that the work of extracting the coal would start at the outer edge of the field and progress toward the center—the very reverse of what is customary and of what an operator must do in a whimsical vein.

In the anthracite field, no one knows what will develop at the end of a week or a month of work in a vein. An "entry" may be running absolutely horizontal to-day. Next month the same miner may be mining up a hillside so steep that he must leave the coal where it falls to-day in order that to-morrow he may have it to stand on while he attacks the new "face." Here, again, the Illinois and the anthracite field furnish the extremes. In between are found all possible variations from both conditions.

There are other highly important variations. For instance, in Logan County, West Virginia, the coal lies between a roof and a floor of solid sandstone. It is so unlikely that any of this roof will fall that most of the coal can be taken out.

In the northwestern part of Illinois, on the contrary, the roof is quite pliable.

However, the vein is so thin that the mines are worked on what is known as the "long wall" method. That is, the roof is so low that it will bend down—without breaking—to rest on the floor after the coal has been taken out.

In other places—as in the anthracite field—the roof must be held in place either by the frequent placing of heavy timbers or by leaving much coal unrecoverable in the ground as "pillars." In most mines both methods are employed. In some places the floor is so soft that it heaves, leaving great waves in the ground after the weight of the coal is taken off.

Because conditions vary so greatly, each mine is considered a separate problem. It requires a very skillful engineer to map out a plan by which each mine can be worked.

In laying out a mine other things must be taken into account. Thus, in Illinois, the coal in the ground is on the average worth only about \$50 an acre. But the surface land is worth from \$250 to \$300 an acre because it is in the heart of our great corn belt. It would be bad business to extract \$50-an-acre coal and destroy \$25-an-acre farm land. So a third of the coal is left in place as pillars to protect the farm land.

In the anthracite field, in places, cities are built on the surface and must be protected against "mine caves." Also, in the anthracite field, thin but valuable coal veins lie immediately above those which are being worked and must be protected.

On the contrary, in parts of West Virginia and in the bituminous fields of Pennsylvania, the coal is overlain only by worthless mountain land. There the roof can be allowed to collapse without damage. Mining methods have to take all of these things into account.

Living Conditions of Miners

When it is realized that the coal operator must put his mine where he finds the coal and when it is known that he finds the coal in all sorts of places, from a wild mountain pass to the center of a populous district, it becomes inevitable that the living conditions of coal miners must cover an extremely wide range. For example, the country has been, by reports of "mine caves" which wrecked many buildings, made fully aware of the fact that coal mines exist under Scranton, Pa. The workers in those mines have obviously all

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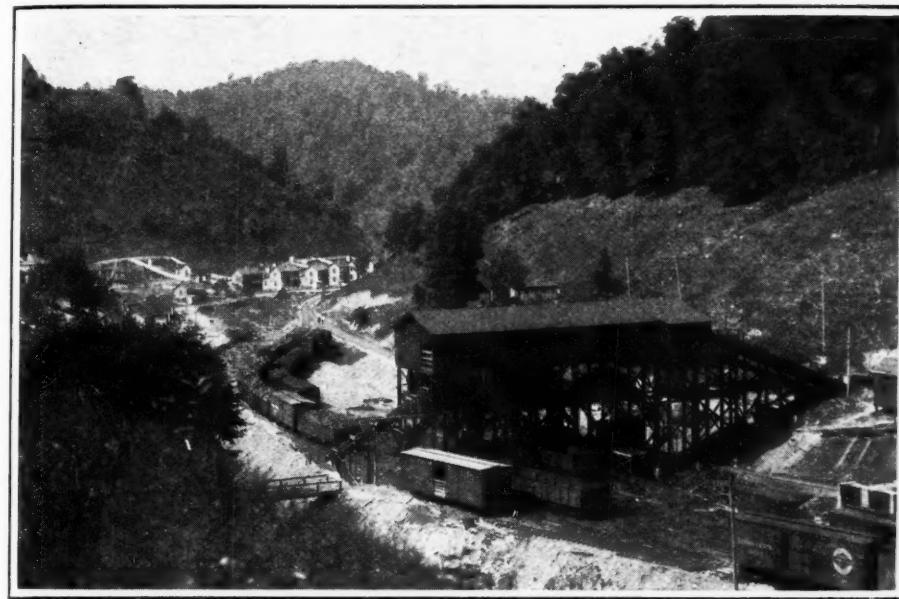
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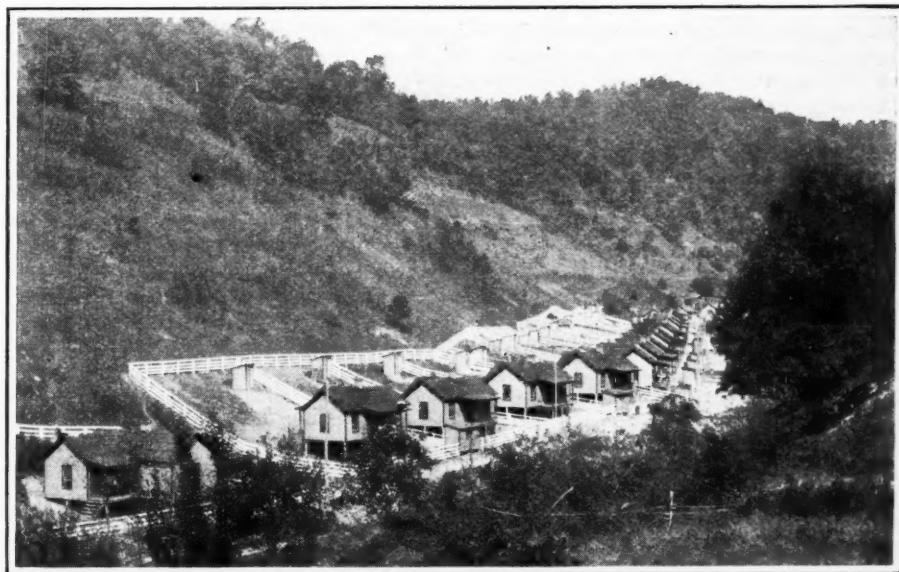
A "TIPPLE," WHERE COAL IS TRANSFERRED FROM MINE TO RAILROAD CAR

(After being hauled out from the mine—the entrance to which is shown at the extreme right—the coal is here weighed, sorted into sizes, cleaned of slate, and dumped into railroad cars)

the advantages of living conditions in a settled community. Also, coal mines exist under Pittsburgh, with the same re-

sult upon the living conditions of miners.

On the contrary, a few years ago, a railroad was driven up Main Island Creek in



A GROUP OF MINERS' HOMES NESTLED IN THE VALLEY BETWEEN TWO LARGE HILLS

(This is the beginning of a town that may later develop into a city)

Logan County, West Virginia. Within eighteen months so many new mines were opened that that new railroad was hauling 600,000 tons of coal per month. The country was so nearly a wilderness that on the night before my first visit to that field a wildcat was captured on the edge of the clearing.

Under such extremes surrounding the necessities of coal mining, no uniformity of living conditions for miners is possible. One mining district has naturally all the advantages of a settled community; another must face all the disadvantages of a pioneer.

The size of the operating company, and especially the length of its purse, has much influence upon the kind of living conditions provided for the miner. A few years ago a man who had been a partner in a coal-selling firm sold out and put \$50,000 in a mine in an entirely new district of West Virginia. With that small capital he had to buy the land, pay for the development work, build his town, and pay his operating expenses until money began to come in. He could afford but the cheapest of houses for his miners.

On the contrary, the Consolidation Coal Company—with fifty years of successful history behind it and with credit which would allow it to float a bond issue of \$10,000,000—bought more than 100,000 acres of coal land in the Elkhorn basin of eastern Kentucky. Its coal was in a mountain range with a beautiful valley on either side. The acreage was so extensive as to allow the coal to be attacked from both valleys. Accordingly this company built the town of Jenkins on one side of the mountain and of McRoberts on the other. Before the railroad was finished it hauled the necessary machinery over the hills by all possible devices. It built, in those valleys, saw mills, cement plants, brick kilns and everything needed. When the first railroad train arrived over the new railroad it pulled into towns all laid out along macadam streets, with water-works and sewers, with a lake for beauty and pleasure, and with excellent brick houses for the miners. The town plan was developed around a civic center which contained, all of brick, the administration building, the town hall, the theater, the hotel, three churches and two club houses. The hotel is not equaled in Kentucky outside of the city of Louisville.

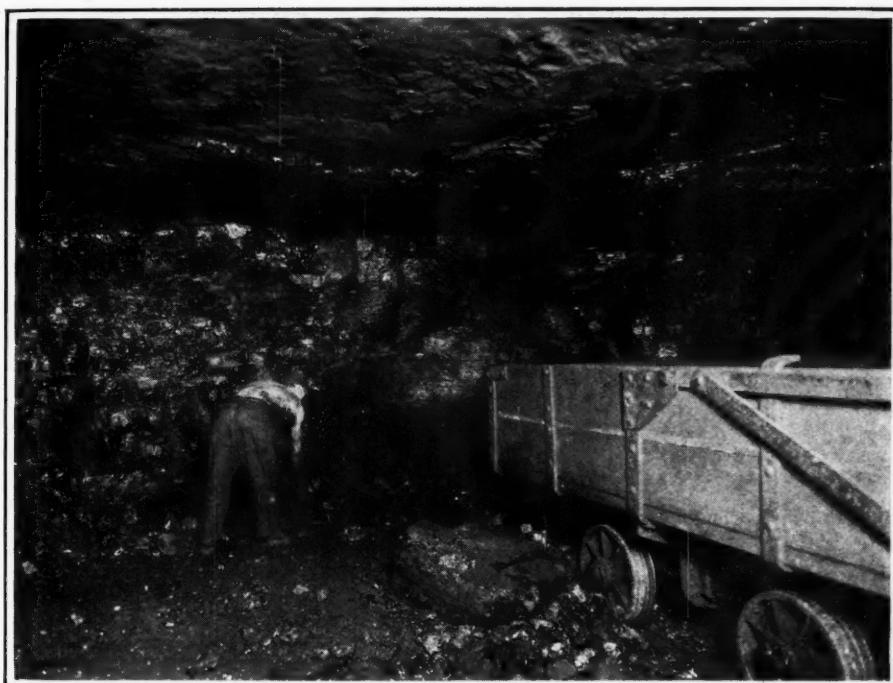
Similar contrasts exist wherever you go. Near Bluefield, W. Va., at the little town of Pocahontas, Isaac T. Mann, the master spirit of the Pocahontas field, has built a village which is English in every aspect. The significance of this is that most of the miners are Irish or Scotch. The town was built to give them a familiar atmosphere. The impression left by a visit to this village is one of brick houses squatted low on the ground; of an abundance of vines climbing over house walls; and, of a friendly proximity of house and sidewalk.

But if you walk from that village up to the junction point of two branch lines of railroad and then walk down the other branch line—you can do it all in an hour or a little more—you come upon the other thing which, unfortunately, has given the tone and color to living conditions in the whole coal field. There the railroad line runs through a narrow, crooked valley which is flanked on either side by naked hillsides. On one side of the railroad track is a filthy little stream which is, by some stretch of the imagination, called a river. At intervals, the huge ugly "tipples"—the buildings in which coal is transferred from the mine car to the railroad car—stand with their forefeet on the floor of the valley and their haunches squatted on the hill-side. Flanking them, on either side, are rows of wooden shacks on stilts with porches stretching out to the banks of that little "river." I have seen, in February, boys with their legs bare to the knees, walking through the cold mud and picking their way with care to avoid the ice which, at intervals, showed through the mud.

The pay of the miners who live in the vine-covered brick cottages and in the shacks surrounded by mud and pigs is the same. The difference in living conditions represents, in large part, a difference in taste. One group came from Great Britain. The other group came from the Balkans.

At Windber, Pa., a town of 22,000 inhabitants, the Berwind-White Coal Mining Company erects houses in blocks of 100. It operates its own saw mills, brick kilns, cement burners, and has its own wholesale plumbing company. It buys or manufactures house materials in quantity. It lets contracts for house building in quantity that thereby it may get the lowest cost. It sells these houses to the men at cost.

At Kincaid, Illinois, F. S. Peabody has built two model mines for himself and



LOADING THE COAL INTO THE PIT CAR, AFTER THE BROKEN PIECES HAVE BEEN SHOT DOWN FOLLOWING UNDERCUTTING

a model town—mostly on the Dutch Colonial style—for the men. These miners are Welsh and Scotch. They take good care of property because they appreciate good living conditions.

It would be possible to multiply indefinitely the illustrations of contrast and to paint pictures of those middle-ground conditions which of course exist. Only one thing can be said. The tendency—slow but steady and patient—is away from mud, pigs and board shacks, because coal companies are getting into more substantial positions as they expand to control large acreages, and “dig themselves in” for a stay of fifty or more years in one locality.

Seasonal Fluctuation

Bituminous coal, in the main, is used in industry. The months when the farmer is spending and when general business is good are the months of boom demand for coal. The months when the farmer is out of the market and when general business is dragging are the months of depression in coal.

Indeed, if the total movement of all commodities by rail in a given year is divided

into twelve equal parts; if the movement of coal is similarly treated; if the actual movement in the various months of both coal and general business is reduced to a percentage above and below the average, it will be found that the percentage fluctuations in coal, month by month, are almost identical with those in general business. This, at least, is the result of simple mathematical calculations based on the available reports of the American Railway Association which tell the number of cars of various and all commodities loaded for shipment.

Thus it is true that coal is a very highly seasonal business; but so is all American business. In a business way, we all rise and fall with the buying power of the farmer.

Even if our writers and our economists are just now discovering the fact, the seasonal fluctuations in coal are not new. Instead, they have been vastly worse in the past than they are now. As we advance toward more complete industrialization and especially as we take on export trade, these seasonal fluctuations will diminish steadily until, as in France, Belgium and Germany, they disappear.

These seasonal fluctuations being known, the coal mines have attracted that type of labor which prefers a highly seasonal occupation—because it prefers the long seasons of "rest"—or which, being thrifty, desires to vary its occupation by mixing in a little of gardening or of farming. The steady complaint of the industry has been that most miners are so wedded to their seasonal routine of fishing or farming that it is next to impossible to increase, even under great stress, the production of coal by persuading them to work the necessary additional days. Thus in 1918, when we were in the throes of the World War demand, it was possible to get but a limited number of additional days work out of the miners of Pennsylvania. Therefore, the production of bituminous coal in that State in 1918 showed the extremely modest increase of about 10,000,000 tons over the pre-war record of 175,000,000 tons. In Illinois the achievement was vastly greater. As a direct result of working the mines an additional number of days, its coal production rose from 65,000,000 tons to 91,000,000 tons. But, in that same year, the farmers of Illinois found it

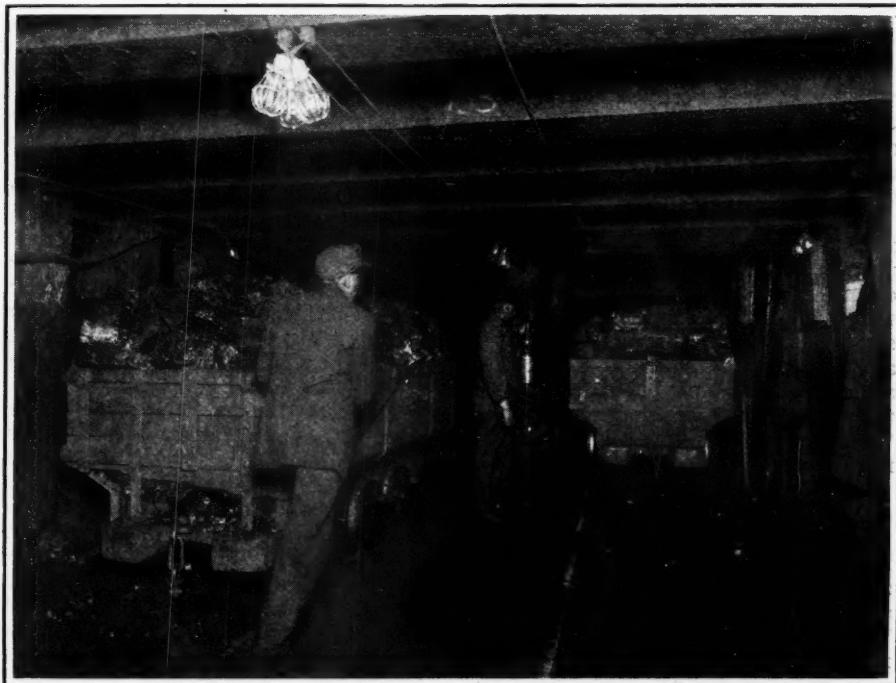
practically impossible to harvest their crops. They reported that never had they paid such high wages. Coal production there was increased at the expense of the adjacent farms.

In the light of a record which is consistent through the years, it must be set down as a fact that the coal industry is highly seasonal and that the workers who are attracted to the coal mines are those who prefer a seasonal industry.

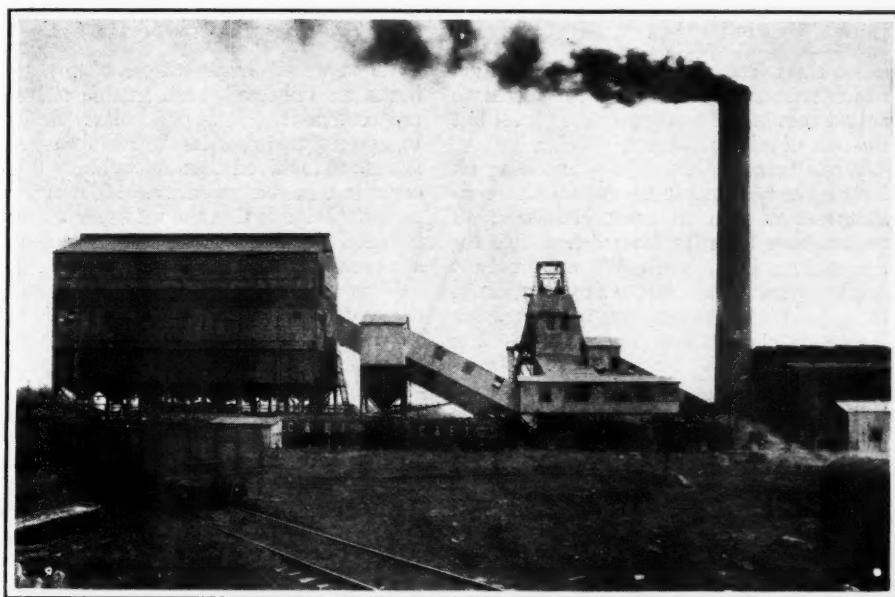
The trouble starts, of course, when these workers demand that they be paid, for part time, the same wages as are earned by those others who work the year round.

Coal Production and Distribution

Because of many and great uncertainties which attach to our immediate business future, hardly a single figure exists which measures accurately any phase of our coal business—actual production, potential production, actual consumption or likely consumption. We are literally in a state of flux where all past facts have lost most of their significance and where future facts have not taken form.



PUSHING THE PIT CARS UPON THE "CAGES" READY TO BE HOISTED TO THE SURFACE
(In some Illinois mines as many as three of these cars are "caged" every minute)



TYPICAL TOP WORKS OF AN ILLINOIS MINE

(At the right is the power-house; in the center is the "tipple," and on the left is the "washery" and resizing pit in which the dirt is washed out of the smaller sizes and they are graded into various sizes of "nut" coal)

For instance, in 1918 we produced about 90,000,000 tons of anthracite and seemed to have need for more. In 1921 we produced less than 75,000,000 tons and had a great storage pile at the end of the year. In bituminous, we produced 578,000,000 tons in 1918 and had a big surplus at the end of the year. We produced about 410,000,000 tons in 1921 and had, at the end of the year, the same storage pile as we had in 1918. Recently, fluctuations of 100,000,000 tons between the productions of two years have been rather more common than uncommon. No one, under such conditions, can say which is normal, which is abnormal, and which is subnormal. We simply do not know.

Judging the future by the past—as the insurance actuaries do—the most pessimistic estimate would assure that the average production of bituminous coal for the five years ending in 1925 should be 585,000,000 tons, or about 10,000,000 tons ahead of the peak production during the war. Taking the potentialities of our manufacturing industry into account, it would be easy to absorb that production; but, taking the state of our carriers into account, it will be impossible to transport it. For these reasons we simply do not know what to expect.

The coal figures are equally as confusing. We entered the war with less than 6000 bituminous coal mines. We came out of it with more than 11,000 mines having private railroad sidings and with about 14,000 so-called "wagon mines"—those not directly connected with railroads.

The railroads are, by law, required to rate each coal mine and to give to each its proportion of all cars available in that district. If the bituminous coal mines should ship in any year the full amount of their "rated capacity" they would produce about a billion tons of coal, or a little more than 19,000,000 tons per week. Yet, in the times of greatest stress and under the most favorable conditions, the bituminous mines have never actually shipped as much as 14,000,000 tons in any week. They could not possibly sustain, for six weeks, a movement of 12,000,000 tons per week without crowding other traffic off the rails.

Those estimates of our productive capacity which are commonly used are evidently much too high. How much our productive capacity has been reduced by labor or by the insufficiency of transportation, we do not know. Only one thing is definitely known, because proved. We have enough facilities, in plants and men, to overstock

the market under any state of demand—if the railroads can carry it. This fact creates a constant state of intense competition which reduces the selling price of coal to actual cost of production or less for all but the best of mine managers.

While many honest and painstaking efforts have been made to reduce the consumption of coal to exact estimates, all results have been far from dependable for the reasons just given. We have only a few known demands, but even they can not be put in tabulated form because some figures include parts of other figures. The railroads, normally, consume between 130,000,000 and 150,000,000 tons per year. Coke-making requires between 75,000,000 and 85,000,000 tons of bituminous coal per year. Electric public utilities use between 25,000,000 and 35,000,000 tons per year. Coal mines burn about 10,000,000 to 12,000,000 tons per year under their own boilers. Canadian exports amount to about 17,000,000 tons of bituminous and 4,000,000 tons of anthracite. Overseas exports will average close to 10,000,000 tons. New England will consume about 30,000,000 tons of anthracite and bituminous per year. Chicago requires between 35,000,000 and 40,000,000 tons of all kinds of coal per year. The Great Lakes will take about 25,000,000 tons of bituminous and 4,000,000 tons of anthracite. The section east of Harrisburg and Buffalo will consume about 38,000,000 tons of the prepared sizes of anthracite and about 25,000,000 to 35,000,000 tons of the steam sizes of anthracite. The household trade of the United States will consume about 85,000,000 tons of bituminous coal. The figures, of course, for Chicago, New England, the Lake territory, as here given, include the coal for the railroads, gas plants, electric public utilities, households and so on. Some of the figures overlap for those reasons. The remainder of our coal production goes to meet the nation's manifold needs for fuel. Naturally, these needs change from day to day, from month to month and from year to year in direct accord with the activities of a great people whose activities are diversified and whose industries are meeting the ever changing conditions of trade and commerce. No single yardstick can possibly measure the demand unless it is made sufficiently elastic to accommodate the varying moods of a whole people from year to year.

The Present Emergency in Coal

When we are in the throes of any great industrial upheaval, such as this strike of the coal miners, it is particularly difficult to avoid "taking sides." Also, so many issues are involved that one is likely to become lost in the labyrinth. However, my personal belief is that the whole controversy between the miners and operators can be simmered down to three things, namely:

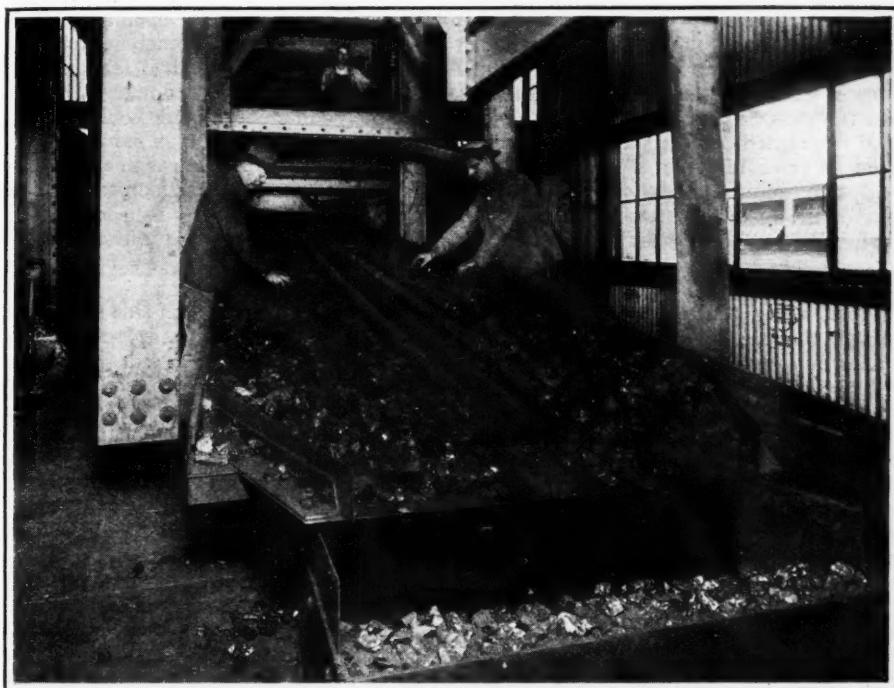
First, the union mines cannot meet the demands of the union and also the competition of the immediately adjoining non-union mines. They cannot pay the wages named by the union and still charge the prices for coal demanded by the public.

The non-union fields cannot be unionized—and their labor costs raised to a par with those of the unionized mines—without the expenditure by the union of large sums of money raised by the check-off in the union fields. And the union mines cannot check off funds for this purpose without being charged with being in a conspiracy with their miners to destroy the competition of the non-union fields.

Second, the union cannot get, from the union mines, either the wages or the working conditions demanded by its members so long as the operators have their revenue reduced by the competition of non-union mines. The union cannot raise the funds necessary to conquer the non-union fields without the "unlimited" check-off in the union fields. The operators, because of conspiracy charges made in federal courts, are balking at the check-off. Without it the union cannot be held together, even in the unionized fields.

Third, in harmony with the labor thought of the world, the miners' union demands that the coal industry be nationalized; that the miners be given national agreements; that they be accorded profit-sharing—their constitution demands the "full social value of a ton of coal"; that the hours of labor be reduced, to the end that by working less each day the available labor be spread over a greater number of days per year; and that they be paid enough for the time worked to allow them to live "according to the American standard" during the year.

The operator resists nationalization as an infringement upon his property rights. He opposes national agreements as being unresponsive to the wide differences in mining conditions in the various fields. He resists



PICKING SLATE FROM THE COAL AS IT PASSES DOWN A CHUTE

the shorter hours as having a tendency to put him even further out of competition with the non-union fields. He resists the demanded increase in pay as tending to eliminate him from competitive markets.

A few illustrations will suffice to indicate what the operators have in mind. According to figures which have developed recently, Pennsylvania produces about 175,000,000 tons of bituminous coal. The central and northern unionized field produces about 50,000,000 tons. The western unionized field produces a like amount. In between and surrounding these union mines are fields which, normally, are non-union and which produce about 75,000,000 tons. These non-union mines produce a grade of coal equal to the best in the western field and superior to the product of the union mines in the northern part of the State.

During the last year prior to the strike the non-union mines had been able to undersell their union competitors by from fifty to seventy-five cents a ton, in a market which usually is captured by a difference of only five cents a ton. The union operators have demanded that competitive conditions must be equalized. They propose to reduce the

union wage-scale or to throw the union overboard.

Western Pennsylvania was not only meeting the competition of the non-union mines in its own State, but stood opposing also the non-union mines of West Virginia and eastern Kentucky, all of which mines produce coal of equal value at vastly lower costs. The competitive condition was enough to force the operators into open resistance to the miners, even if there were no other issue.

However, as a result of "the West Virginia Mine War"—as the affair in Mingo county was called—the operators of West Virginia had gone into the federal court at Indianapolis to swear out an injunction against the union operators. In a formal paper, the charge was made that they were, through the check-off, in a conspiracy with the miners to destroy the West Virginia operators.

Just prior to this incident the federal grand jury in the same court had returned indictments against these same operators in which exactly the same charge of conspiracy was made. Thus, the force which impelled the operators into battle against the check-off is readily understood.

It is equally easy to see the force which drove the miners into this fight. They had, for more than fifteen years, been confronted in each joint interstate wage conference, with the statement that no wage increases could be granted because wages in the non-union fields of West Virginia and eastern Kentucky were already lower than the union scale. The union, to preserve itself, must, it believed, complete the unionization of the closely competing districts. Therefore, it set out upon a conquest of West Virginia, using funds which were raised through the check-off. When that battle had barely started the union was stopped by State troops. And then it had to abandon the aggressive while it fought out with the union operators, in conference, the right to even a continuance of the check-off for the purpose of raising funds to pay the expenses of the local unions. When it was planning a large campaign of expansion it had to fall back to fight a battle for mere existence.

Those are the facts of the situation. The rest of it is but reasonable assumption. The leaders of the miners were not willing, seemingly, to be forced into making defensive warfare. They know the inherent weakness of such a position. They took a boldly offensive step when they demanded nationwide unionization of the mines and nationwide agreements—agreements in which the non-union fields would be forced to sign, along with the union fields, a common wage-scale.

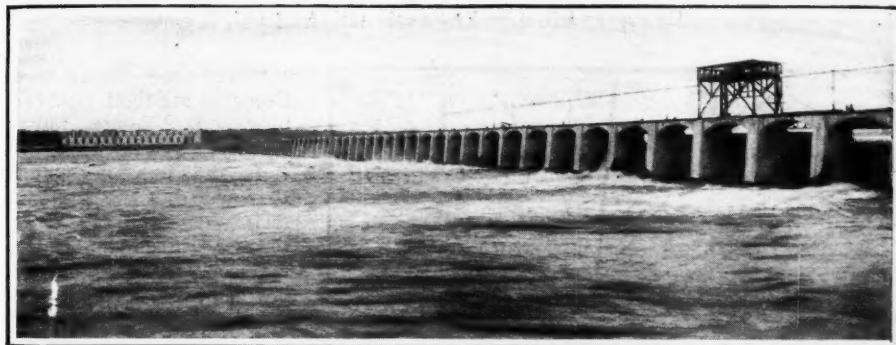
When, however, the operators were asked to enter a national conference to make a national scale, they had to reckon with those facts, previously set down, which tell the widely different mining conditions in each field; the impossibility of fixing a wage-scale which is the same for each field; the inability to compete in common markets if the mines which use many men to produce a small tonnage have to pay the same rates as the mines which employ few men to produce a larger tonnage.

And, in the struggle, each side sought its natural allies. At one point it looked much as though we had arrived at a definite alignment of labor against capital, with the Government likely to be forced to "take sides." That complication was avoided only because the President exercised the greatest patience and employed great skill.

Meanwhile, the strike has been protracted to a point where the failure to produce coal has seriously imperiled the people's supply for the coming winter. Especially is this true of those who live along the lines of railroad which serve unionized districts only and who, as a consequence, have either been able to get no coal at all or have had to move their supply from distances which are vastly greater than is customary. It was this latter situation which caused the President to decide that an emergency exists and to set up that machinery which will try to make an insufficient supply of coal go far enough to avoid actual suffering.



A VAST AREA COVERED WITH LOADED COAL CARS AT HUNTINGTON, IN THE GREAT SOFT COAL FIELD OF WEST VIRGINIA



THE GREAT KEOKUK DAM ACROSS THE MISSISSIPPI RIVER, LOOKING WESTWARD FROM THE ILLINOIS SIDE TOWARD THE IOWA SHORE AND POWERHOUSE

(The Keokuk Dam was completed in 1913, the spillway portion being 4,278 feet long with 119 arch spans. The dam raises the normal water level about 35 feet, furnishing water to operate the power plant and generate 120,000 horsepower—one of the largest hydro-electric power plants in the world)

SUPERPOWER: THE NEXT INDUSTRIAL REVOLUTION

BY JUDSON C. WELLIVER

IT is the afternoon of December 20, 1930. You are making your first visit to the Chief Dispatcher of Power, Eastern Super-power System, at his office at Port Jervis, N. Y. This superpower development has long interested you, but your notions about it are vague. You regard it as one of those modern industrial miracles by which society lives, in which we are all more or less cogs of the machine, and yet which not many of us assume that we are entitled to understand.

The big, high, tiled room, you observe, looks like the combination of the control room of a great electric plant and the switchboard of a telephone system.

Power Control from Boston to Washington

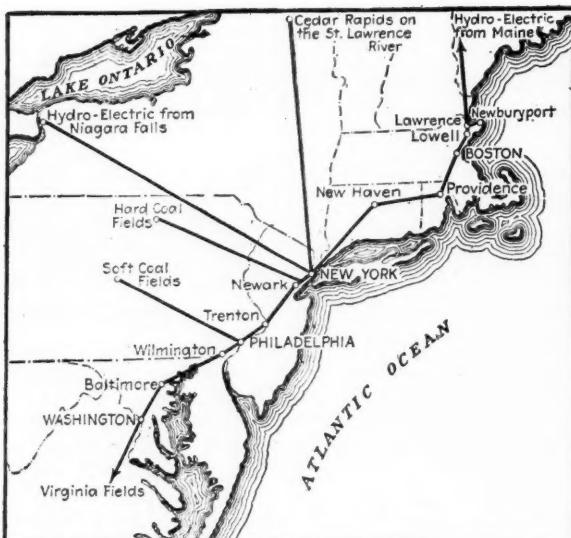
"That's precisely what it is," assents the chief dispatcher. "This is power control for the eastern zone: east of Pittsburgh and Buffalo, north of the Potomac. Railroads, street-cars, factories, lighting systems, all report to us what they will want for every hour of the day; we chart it here"—pointing to a series of sheets suggesting a train dispatcher's train-movement schedule, on the desk—"and deliver the power by manipulating the switchboards or telephoning to operators in other parts of the zone who make the deliveries from their switchboards. Look here."

He walks across the room to a switch-

board, and grasps the handle as if to pull a plug.

"At 4:30 this afternoon factories in Newark will begin to cut off their power and close. Newark is now getting 110,000 kilowatts, or about 140,000 horse-power, from Niagara, through that plug. By 4:30, Newark will be able to relinquish that power for the rest of the day. I'll pull this plug and stop it. But at the same time, the rush of people going home will demand a lot more power for the New York subways. So when I pull that plug to take this 140,000 horse-power from Newark, I'll shove it back into that other socket, and the current will instantly be delivered at New York."

Your friend the Superpower dispatcher controls the distribution of 3,000,000 horse-power from Niagara; as much more from the St. Lawrence; 400,000 horse-power from a steam-electric plant at Pittston, near Wilkesbarre, Pa.; similar quantities from like plants at Nescopeck and Sunbury, Pa.; 400,000 more from a combined steam and hydro-electric plant on the Susquehanna at Harrisburg; and other like units from the steam-electric plants of New York, Philadelphia, Newark, Paterson, Boston, Providence, New Haven, Baltimore, Wilmington, Utica, and so on; other units of hydro-electricity from the Raquette River in Northern New York, from the Potomac



SUGGESTED POWER-TRANSMISSION LINES TO FEED THE PROPOSED SUPERPOWER ZONE OF THE EASTERN STATES

at Great Falls, near Washington; and from several plants on the Delaware, Port Jervis being the center of one of these developments. It is only the middle of the afternoon, and business being quiet for the moment the chief dispatcher takes a few minutes to explain.

Long-Distance Transmission

"Of course, you understand that most of the power of this system is generated by plants installed before the Superpower organization was perfected. The great power plants that furnished light and transportation for all the cities, and power for many of the industries, were simply taken into the Superpower organization and connected up by transmission lines, so that power could be delivered wherever wanted, no matter where generated. But that is largely a temporary arrangement. These older plants are in many cases located so far from coal mines that we can't afford to ship fuel to them; built on land that is too valuable; operated by labor that must have the city scale of wages. So as such plants become obsolescent, they are abandoned, and new ones, built right at the mines, on cheap land, to use cheaper labor, are put into commission, and the power is transmitted to the cities. Immensely cheaper to transport power in kilowatts than in carloads.

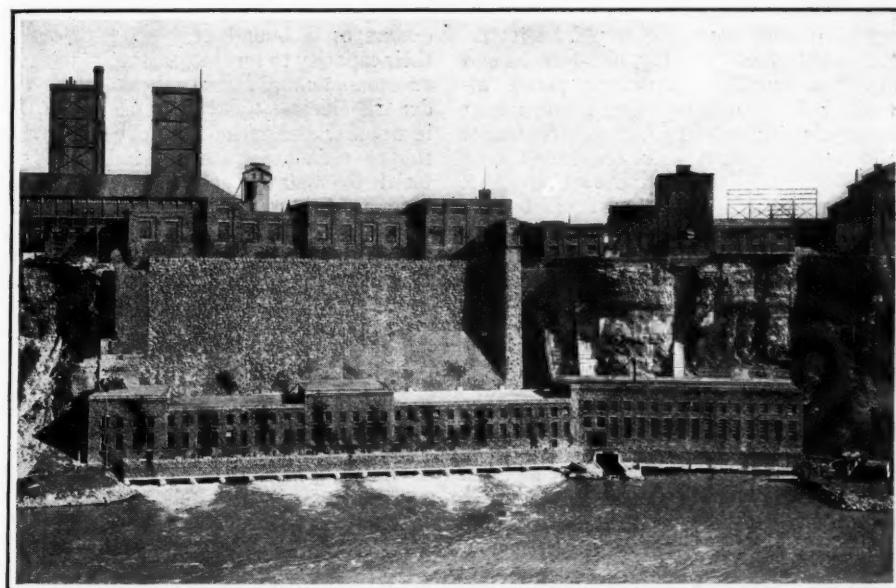
"The shoe factories in Brockton are right now running on Niagara power. At five o'clock they will close, and the power will be switched from the Brockton factory circuit to the Brockton car line circuit, to take the people home. After that, it will probably be switched over to Boston, because this is the holiday shopping season and the cities are using extra loads for lighting."

An attendant steps up and hands the chief dispatcher a memorandum; a few figures filled into a printed form. He glances at it, adds his o.k., and hands it back.

"Notification from Washington," he explains, "that it is raining great guns; business will be practically suspended tonight, and so we can cut off 55,000 kilowatts of Great Falls power from Washington and turn it over to some other town that will need it. There will be plenty of them to-night."

Another memorandum comes, is studied a moment, and receives the o.k. "Raining in Baltimore, too; ordered its excess juice to Philadelphia." The order is charted on the distribution sheet; then the dispatcher pulls over a schedule marked "Metropolitan Area."

"This shows that New York City used 1,500,000 horse-power to-day from 8 A.M. to 9:30 A.M.; largely on the transit system, getting people to work. After that it jumped rapidly to 2,000,000, because the industrial plants were all in operation, and also, it being a very dark day, at the height of the shopping season, shops and offices required an unusual amount of light. At four o'clock the town will need still another half-million to handle the home-ward rush from downtown. The peak of the load for this twenty-four-hour period, at New York, is calculated to come at 5:25 P.M. to-day. That is, on account of street-lighting, shopping, subway traffic, industry, everything, the town will be using most power at that moment. We know almost absolutely the power requirement of every load center, at every minute of the day. At this season the railroads are the most uncertain factor, because holiday travel is



STATION NO. 3 OF THE NIAGARA FALLS POWER COMPANY, DEVELOPING 230,000 HORSE-POWER AT AN EFFICIENCY OF ABOUT 90 PER CENT

(Power from Niagara Falls at the present time is consumed mostly by industries in Buffalo and the neighborhood of the falls, though there are instances of long-distance transmission—notably the operation of shoe factories at Brockton, Mass., 400 miles away. Work now in progress includes the construction of a 32-foot tunnel for diverting water from above the falls to turbines which will develop 210,000 horse-power)

difficult to calculate. The movement of heavy freight is being more and more managed with the view to working as much as possible of it late at night, after the cities have gone to bed, with the hydro-electric power."

Waste Eliminated

The dispatcher walks over to a window and points to a dam a half-mile away, across the Delaware.

"There are nine gates in that dam," he explains. "When they are all open, the water flows down on nine turbines, which run nine generators, and a maximum power is developed. But it is only developed exactly as long as needed. When the demand slackens, some of the gates are closed, shutting off the flow, and saving the water until the load increases again, when they are opened. So no water is wasted. If a river in Pennsylvania is low and not producing normal power, we meet the deficiency by switching on enough from some other source; perhaps from the Potomac power plant, where the water is just now high; more likely, from Niagara or one of the big steam-electric plants over in the Pennsylvania coal region."

Everyone Buys Current from Superpower

If you can project this suggestion of the power dispatcher's duties, to include all power from the Penobscot to the Ohio, from the St. Lawrence to the Potomac; if you can imagine all the power-producing plants and all the power-using centers having their capacities and requirements so accurately charted that there will always be just enough power, always distributed where and when it is needed—then you will have a general conception of what Superpower means. It is a proposal to unify the whole business of producing power, whether for railroads, municipal utilities, or industries. Under its ideal development, no manufacturer, city, railroad or public utility would manufacture power. The power plants, whether at Niagara or on the St. Lawrence, the Susquehanna, the Delaware, the Connecticut or the Potomac, producing electricity from the fall of water; or in the coal regions, producing it by burning coal at the pit heads in huge steam-electric plants—all these would be owned and operated by one gigantic Superpower corporation. Everybody would buy power from it.

The chief dispatcher whose operations we have been observing would be its director of traffic. The big, well-located and highly efficient steam-electric plants already built, would have been taken over by this Superpower corporation. A number of new, model plants, both steam and hydro, would have been installed; the steam plants in the coal fields where fuel could be had without transporting it far; the hydro plants wherever nature has provided power sites. Through a network of distributing mains, the current would be carried wherever needed; sold at meter rates to railroads, street-car systems, lighting systems, and factories.

This power centralization would take the place of some 96,000 independent power-producing plants throughout the zone. Nearly all of these are inefficient; wasteful of capital, coal and labor. The change would bring about enormous savings and largely increase the capacity of the railroads to move traffic. The plan is to-day regarded by men of vision as an inevitable development of the near future. The national Government has made detailed surveys and prepared plans. It is generally accepted that the greatest single advance toward solving the railroad problem lies in electrification.

Electrification the Order of the Day

The war brought Superpower programs to attention in both the United States and Great Britain. In England, even before the corresponding move in the United States, a technical commission worked out a scheme for electrifying the Kingdom. This embraced utilization of water-power, so far as it exists, and dividing the Kingdom into a dozen power zones based on the natural distribution of coal and water-power. Each coal field would be the nerve center of one or more Superpower zones. Steam-electric plants would convert the coal into electric current at the mine-head, whence the power would be distributed. In England, as here, it is realized that the lessened transportation of coal would be equivalent to greatly increasing the capacity of the railroads, which is as important there as here.

Indeed, this is desperately important to-day in every country dependent on railroad transportation. Unless the railroads are somehow enabled rapidly to increase their tonnage capacities, the world's growth

in population, industry and commodity exchanges is bound very soon to outrun their capacity to serve it, and to bring about an economic and industrial paralysis. Under the old and wasteful system the world in another generation would be unable to supply coal, or capital, or industrial material to maintain an adequate railroad system. Superpower, by cutting off most of the coal tonnage of the roads, and simultaneously increasing, through electrification, their capacity, would largely solve the problem of the railroads.

How Will Superpower Be Financed?

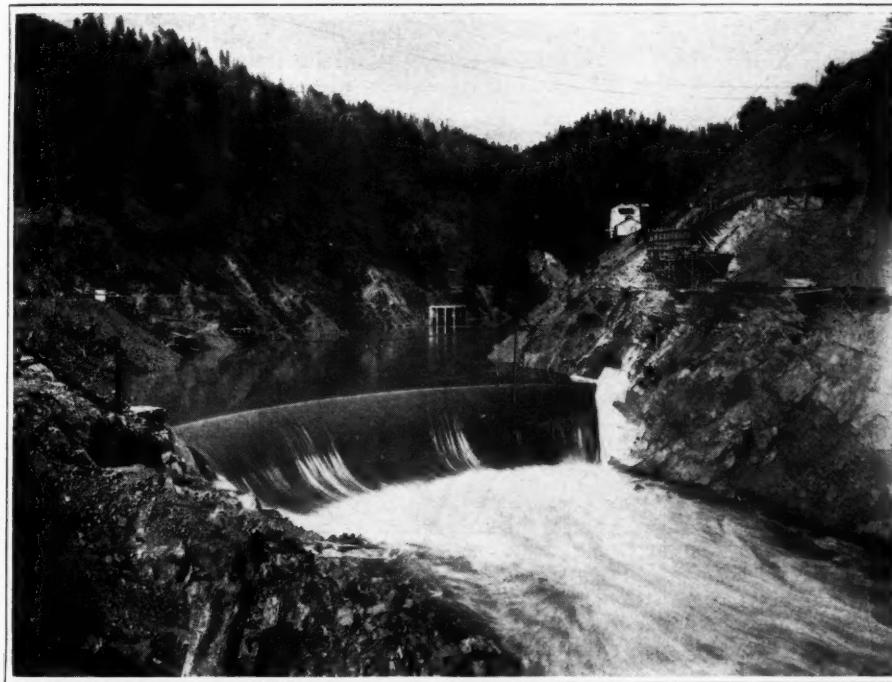
A single corporation thus centralizing control of power in the greatest industrial and metropolitan area in the nation would of course wield a tremendous authority. Therefore it would have to be under rigorous governmental control—State and Federal. Its rates would be fixed by public-service commissions—State and interstate.

The plan for financing Superpower would be, broadly, to have it take over all the big, efficient power plants already existing and exchange its shares for them on a proper valuation. It would still be necessary to raise a large sum for installation of new plants, both steam and water, and for the erection of transmission lines. To find this capital, stock would be sold in the market. This is, very crudely, the financing plan of the consulting authorities.

Superpower on the Pacific Coast

It is not expected that at the outset perfect organization or centralized control will be possible. Many concerns will continue to operate their own power plants for a time, associating themselves with Superpower by some sort of buying and selling contracts. A great industrial corporation making its own power would sell its surplus power, at seasons when it had a surplus, to Superpower; and at other seasons, when it did not produce its full requirements, would buy from Superpower for the deficiency. The engineering essential is to get all the power resources pooled, harmonized and coordinated, waste eliminated, and supply adjusted to demand.

If the Superpower program looks big, complicated and impracticable, it may be said that there are two Superpower zones already organized in this country, either of them greater in area, though not in power requirements, than this northeast zone.



INTAKE WORKS OF THE BIG BEND GENERATING STATION, CALIFORNIA, SHOWING THE DAM IN THE FOREGROUND AND THE INTAKE TOWER IN THE REAR

(This is one of the most important of the Northern Californian hydraulic installations. The Great Western Power Company, which operates the station, plans for an ultimate development of 560,000 horse-power in Northern California)

On the Pacific coast there is almost complete physical unification of the power producers of Oregon, Washington and California. These in turn can easily be connected with the big powers of Montana, so that the whole area is close to unification. The difference is that on the Coast most of the power is hydro-electricity, and always will be because this region is richest in water-powers, but poor in coal; whereas, the northeastern area has much coal but limited water power.

Muscle Shoals as a Superpower Center

Perhaps an even more striking illustration of Superpower in being is in the Southern Appalachian region. There, a group of great power corporations have been connected up, covering roughly the Carolinas, Tennessee, Alabama, and Georgia, with parts of Virginia. Muscle Shoals, when developed, will be the greatest single power center in this region. A Superpower map of the area shows producing and distribution systems of ten corporations, five of

which represent the greater part of the establishment. These five are the Alabama Power Company, the Southern Power Company, the Tennessee Power Company, the Georgia Railway and Power Company, and the Carolina Power and Light Company. Most of their power is hydro-electric. Of all electrical power furnished by public utility corporations in Alabama, 66 per cent. is hydro-electric; in Georgia, 83 per cent.; in North Carolina, 84 per cent.; South Carolina, 93 per cent.; Tennessee, 74 per cent. The zone as a whole shows about three times as much power being developed there already from water as from coal.

The practical workings of Superpower received impressive demonstration last year, when there was a drought in the eastern part of the zone, and rivers flowed so little water that power requirements could not be met. In the western and southwestern parts of the zone the rivers were normal, and the drought area simply borrowed power from these sections!

Wastefulness of the Small Plant

Superpower represents one of the greatest waste eliminations that engineering science has devised. Steam plants producing up to 200 horse-power are invariably uneconomical. It would be cheaper from every point of view to scrap them and buy the power. The argument is almost as strong as to plants of from 200 to 500 horse-power. Not until you get into the realm of very large producers, and of industries that can make substantially continuous use of their power, is it economically admissible for an industry or public utility to produce its own power; and even for these, the advantage is decidedly on the side of buying from a Superpower system, provided its rates are properly regulated and reasonable.

The small plants use from ten to twenty pounds of coal to produce an electrical kilowatt hour; a kilowatt being about one and one-third horse-power. On the other hand, the big, modern steam-electric plant produces the same power from rather less than two pounds of coal. The saving in labor is very large; so that Superpower, after provision has been made for the transmission mains it would require, still represents an enormous saving.

One of the great economies is represented by the scrapping of thousands of these small plants, as well as many big ones which would be efficient save for the fact that coal must be hauled too far to them. Constant increase in the efficiency of the large plants tends to widen this gap between the efficiency of the great and small plants. The Superpower Survey finds that the 96,000 manufacturing establishments in the zone would save \$190,000,000 annually by buying Superpower! It would cost \$1,294,000,000 to equip the zone to accomplish this saving. The manufacturing and public utilities together, on the same investment, would save \$429,000,000, or 33 per cent.!

Saving from Railroad Electrification

There are 36,000 miles of railroad, measured to single track, in the zone; of this, 19,000 miles can be profitably electrified at a cost of \$570,000,000. The saving would be \$81,000,000 annually, or 14.2 per cent. This calculation, however, does not take into account the enormous increase in efficiency of the railroads when electrified—their capacity to move greatly

increased business over the same rails. This, as will be explained, is a much more important item than the direct economy in cost of power. The saving in coal is calculated to be 50,000,000 tons annually; but the saving in transportation of coal, which is the greatest item in the cost of fuel, would be much more important.

The electrification of railroads, the establishment of Superpower, and the consequent elimination of the greater part of coal movements, would take a burden from the railroads so great that few people have any conception of it. The total freight movement of the United States in 1921 has been calculated as 1,691,000,000 tons. Of this, 674,000,000, or 40 per cent., was coal and coke. In the eastern district, which is nearly coextensive with the Superpower zone, the total freight movement was 935,000,000 tons, of which coal and coke constituted 471,000,000, or almost exactly half. In other words, if it could be made unnecessary to ship coal, half the burden now moved by the railroads in eastern districts would be taken from them! Forty per cent. of the burden in the entire United States would be lifted!

Of course, it is not possible to accomplish all this. At the outset it is found that about 20 per cent. of all coal is used for heating and domestic purposes, and most of this would still be required. But the saving in tonnage still remains so stupendous as to promise solving the freight-congestion problem. Not only would the railroads have less freight to move, but they would be far better equipped to move it. Let us look at this aspect.

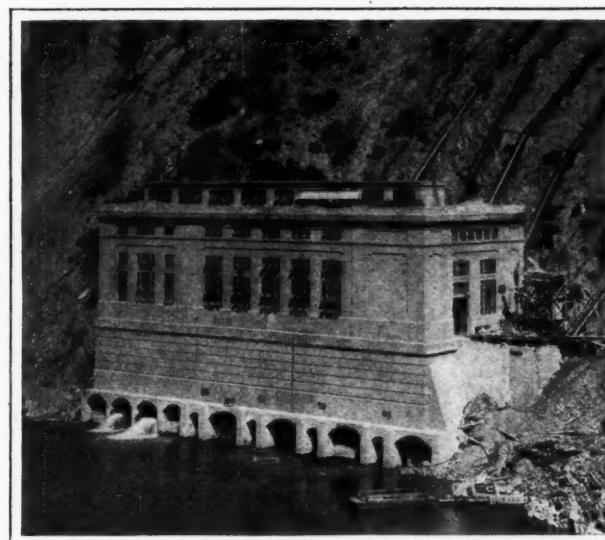
Has the Steam Locomotive Reached Its Limit?

The electric locomotive will move a much larger amount of freight in proportion to its weight than the steam locomotive. In recent years steam locomotives have increased rapidly in size and the train-load has similarly grown. But this growth cannot go on indefinitely; in fact, it is practically stopped now unless the strength of bridges, size of tunnels, and weight of rails, shall be increased. In short, there must be a complete reconstruction of the railroads, with heavier rails, roadbeds, locomotives, and cars; with wider gauges, lower grades, heavier bridges—or else, the present plant must be made to handle an increased tonnage without these changes.

Fifteen years ago two of the foremost transportation experts of the world told me of the impending breakdown of the railroads. Neither of them foresaw the war, which hastened by a few years the calamity which, as early as 1907, both regarded inevitable. In the summer of that year I was sent to Europe by President Roosevelt to study some transportation and other questions, and an interview with Mr. William Michael Acworth proved one of my most illuminating experiences. Mr. Acworth had long been a director of the Pennsylvania System, representing English investors, and he regarded it as the world's foremost railroad. The British railroads, he told me, with their small cars, light locomotives, and generally Liliputian equipment, had already reached their limit. It would be physically and financially impossible to expand them fast enough to keep up with demands. The best that Mr. Acworth could hope was that some time they might be raised to something like the Pennsylvania's efficiency standard.

E. H. Harriman on Railroad Efficiency

A little while afterward Mr. Edward H. Harriman, then head of the Union Pacific System, and the leading figure in the railroad world, talked to me about the railroad future. Of all the railroad men I have known, Mr. Harriman had the most remarkable vision, and events have most completely justified him. He told me that if the United States continued to rely upon the rails for most of its transportation, the railroads would have to be completely rebuilt. Pennsylvania efficiency, applied to British railroads, might serve them for a time; but Mr. Harriman emphatically declared it would not serve the purposes of American railroads more than a few years. So he was looking forward to a time of six-foot gauge railroads, instead of the present four-foot, eight and a half inches. He declared that some lines would have to be



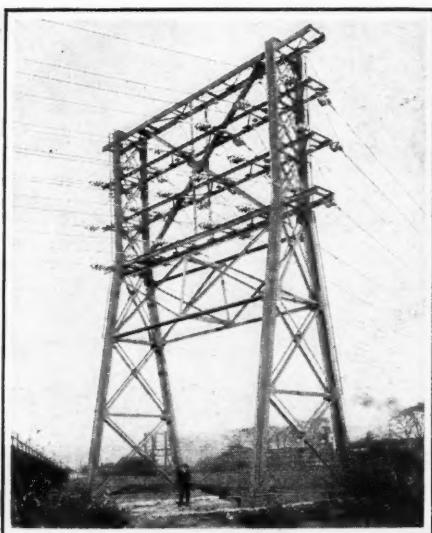
POWER-HOUSE OF THE GREAT WESTERN POWER COMPANY IN NORTHERN CALIFORNIA

(Showing the pipes which carry water to the turbine wheels, from above the falls)

constructed and operated exclusively for freight, probably requiring a seven-foot gauge. On these cars of 100 to 150 tons would be used, a hundred to the train. All this would require stronger bridges, larger tunnels, heavier rails, lower grades and firmer ballasts.

Here were two men, one of whom, Mr. Acworth, I considered, and still consider, the greatest transportation economist; the other, the greatest railroad organizer, financier, and operator. Both, fifteen years ago, saw the crisis coming, and realized that almost superhuman foresight and ingenuity would be required to cope with it; yet neither suggested electrification, simply because, so recently as fifteen years ago, they knew almost nothing about it. If they had seen the experience which has since been accumulated with railroad electrification, I make no question that they would have pointed to it as representing at least a long step.

Mr. Harriman, pointing out that the tonnage of American railroads doubled every decade, declared that neither the steel capacity nor the capital resources of the country could meet the situation. His solution, so far as he could think one out, was bigger railroads, and their combination into a few great systems, more efficient and economical. So, he was devoting his life



A TRANSMISSION-LINE TOWER

(Connecting the power stations of the Niagara Falls Power Company with the power distribution system covering western New York)

and talents to fighting, against the Government, the anti-trust law, and the overwhelming force of public opinion, for consolidations which he believed absolutely necessary. He told me that if he lived long enough he would get all the railroads into a very few huge systems, and that when he had done it, the politicians and the public who were fighting him would build monuments to him.

How fully Mr. Harriman has been justified, may be left to the verdict of Representatives and Senators who passed the Cummins-Esch bill, providing for just that kind of combination; or to the national administration that ordered the United States Geological Survey to make the Superpower investigation, and gave its approval to a public-service monopoly in power vastly more startling than any railroad combination that Mr. Harriman ever imagined. We have gone a long way since 1907!

Advantages of the Electric Locomotive

What is the ground for claims that Superpower and railway electrification will largely solve the transportation problem? It is, first, that Superpower means elimination of a very large percentage of the tonnage the railways now have to move; and second, that the electrified railway is a much more efficient transportation machine, capable

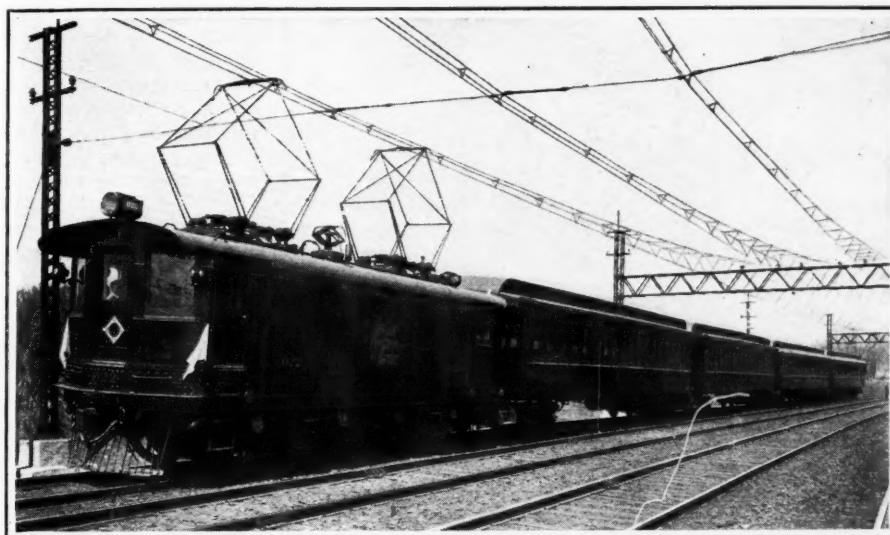
of moving more freight, moving it faster, and at lower cost. Let us examine some of the evidence on this point.

Data on the comparative performance of steam and electric locomotives for railroads are now available and have been collated by the Superpower study. The Chicago, Milwaukee & St. Paul operates an extended electrified mileage on its mountain divisions of the Northwest; the Norfolk & Western and the New Haven have thoroughly tried out electrification in the East; the New Haven and the Pennsylvania have furnished demonstrations of its adaptation to the congested traffic of the metropolitan areas. The results demonstrate the electric locomotive's superiority from the standpoint of economy, tonnage capacity, and speed, for every class of work. On the Norfolk & Western the electric locomotive, in a heavy freight area, has produced about three times the ton-mile movement that the steam locomotive can show. The electric machine is almost not limited in its capacity by the peak grades, because it merely requires more power to conquer them.

The electric locomotive consumes whatever current it needs in pulling its heavy train up hill, but when it gets to the top and starts down hill, its motor is put in reverse, becomes a dynamo, and under the weight of the train generates and returns to the wires a charge of current available for use elsewhere! In short, the train running down one hill by force of gravity contributes very considerably toward pulling another train up the other side of the hill.

The electric locomotive is cleaner, simpler, and requires vastly less attention than the steam locomotive. When it comes off its run it can be inspected and put in order for another trip in an hour or so; the steam locomotive is likely to require as many hours of expert attention in the roundhouse as it spent on its trip. The electric locomotive can be kept twenty hours a day at work, while the steam locomotive is doing well to produce an average of eight hours a day.

Again, there is a very wide range of types and weights of steam locomotives. A very few standardized types of electric locomotives, for switching, passenger, and freight work, will suffice. A far smaller number of locomotives would be required to do the same work if they were all electric. Freight-operating divisions would be greatly lengthened, producing a corresponding decrease



AN ELECTRIC LOCOMOTIVE AND TRAIN ON THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD

More efficient in every way than the coal-burning steam locomotive. On this New Haven system electric locomotives in passenger service average 73,000 miles per year, while steam locomotives cover only 30,500 miles. Superpower and railway electrification may solve the transportation problem as well as go far toward removing the menace of a coal shortage

in terminal expenses. Freight trains would run at something like double their present speed, and thus the interference between freight and passenger business would be vastly reduced, and the necessity lessened for freight trains to waste time on sidings in order not to discommode the passenger movement.

Steam locomotives in freight service on the New Haven averaged 15,200 locomotive miles per year, while the electric locomotives did 33,500 miles per year; steam passenger locomotives did 30,500 per year, while electric passenger locomotives did 73,000 per year. The electric freight locomotives on the Norfolk & Western did 49,000 miles a year, while the steam freight locomotives of the Pennsylvania, eastern lines, did 19,900.

The electric locomotive costs much less for operating wages. On the Eutte, Anaconda & Pacific the wage expense for electric locomotives was found to be 47 per cent. less than for steam locomotives moving the same tonnage. On the Chicago, Milwaukee & St. Paul the wage cost was 42 per cent. less. On the Norfolk & Western two electric locomotives pull the same train as three Mallet steam locomotives, at double the speed; making an output per locomo-

tive hour three times as great, and a saving in crew wages of 67 per cent. Surveying the entire Superpower zone, the engineers conclude that "there will be an increase in ton miles per electric locomotive hour of 33 per cent. and a consequent reduction in crew wages in ton miles of 25 per cent.

Doubling Capacity for Freight Movement

It is calculated that under electrification just half as many locomotives will be needed as under steam operation. Finally, an electric locomotive comes pretty near to being fool-proof. The engineer finds it almost impossible to waste power. On the other hand, in the steam locomotive, the efficiency of the machine and the measure of economy in its coal consumption are almost entirely under the control of the engineer and fireman.

It has been stated that the Superpower zone contains about 36,000 miles of railroad, of which 19,000 could be profitably electrified. It should be explained that the 19,000 miles electrified would represent the great preponderance of all the business done. All the heavy-traffic lines would be electrified; the business of non-electrified lines would be relatively unimportant.

To sum up, it is probably fair to say that



THE MISSISSIPPI RIVER POWER COMPANY'S PLANT AT KEOKUK, IOWA

(The power-house, itself 1,700 feet long, forms a portion of the dam across the Mississippi River which raises the normal water level and generates 120,000 horse-power)

complete Superpower development would so reduce the movement of coal, and so increase the capacity of existing trackage to handle tonnage, that the present railway system would be able to care for nearly twice the gross volume of general business that it is now able to handle. This of course assumes that coal movement is largely to be eliminated, save for heating and domestic purposes. Without electrification there must be spent vast quantities of money in the next few years expanding railroad facilities.

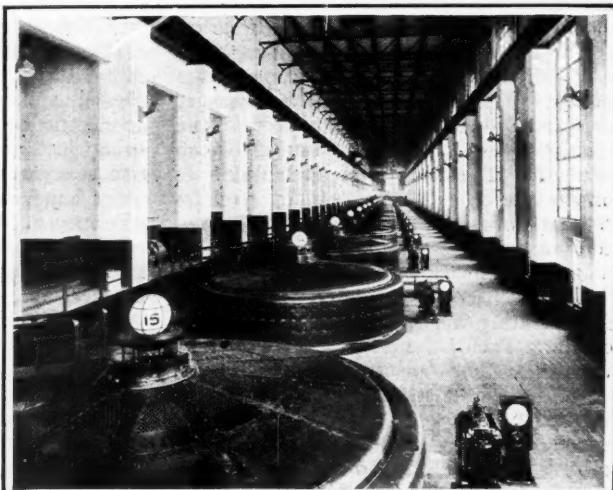
One interesting detail is that the sale of steam locomotives by the railroads to smaller roads would pay about one-fifth the cost of the electrical equipment of their trunk lines.

It is important, in any consideration of the north-eastern Superpower zone, to bear in mind that in this zone the water-power potentialities are so limited that the chief reliance must always be on steam. At present just about one-sixth of the power developed by public-utility plants of the zone is hydro-electric. It is not probable that the proportion ever will be much above one-fourth. This makes it the more important, in the industrial East, that every method

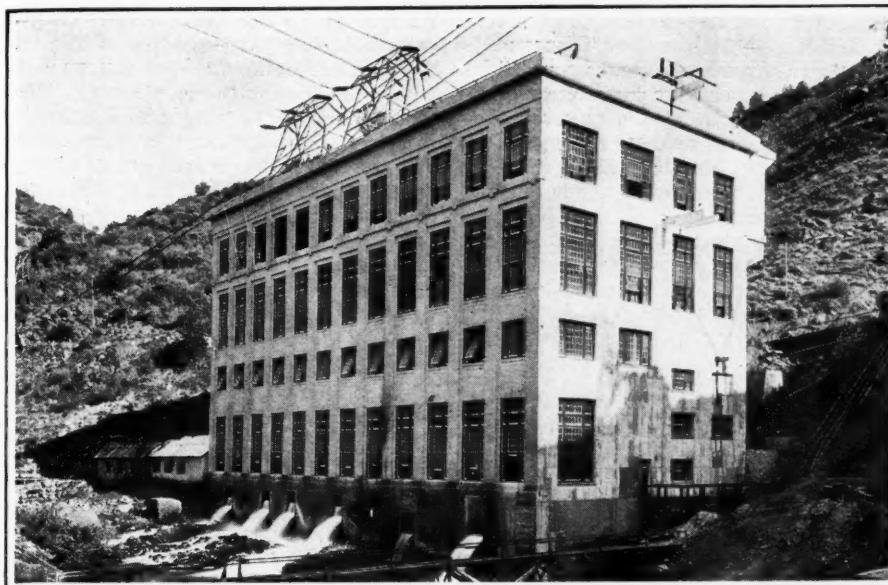
be adopted to save coal.

One of the most impressive arguments for Superpower is that at present the installed power-producing capacity is about seven times as great as the actual consumption of power. That is, on account of the wasteful method of putting in a small power plant for every manufacturing establishment, to be run a few hours a day and perhaps a few months in the year, there is an investment in power-producing mechanisms seven times as great as would be necessary if all the power plants could be used all the time! Superpower contemplates an immense reduction of this capital waste, a huge saving of fuel, and an enormous increase of efficiency.

In this connection, though it has nothing to do with Superpower, it is interesting to observe that motor cars and motor trucks represent an installed capacity of about three times as much horse-power as all the other mechanical power in the country. It is also worth mentioning that Dr. George Otis Smith, Director of the Geological Survey, in discussing power reserves, recently



FIFTEEN GENERATORS IN THE PLANT AT KEOKUK, IOWA, WHERE WATER-POWER IS TRANSFORMED INTO ELECTRIC ENERGY



THE SOUTHERN CALIFORNIA EDISON COMPANY'S SECOND POWER-HOUSE ON BIG CREEK IN FRESNO COUNTY, CALIFORNIA

(Built in 1913, containing three units of 21,500 horse-power each, and using the water coming from the power-house under a head of 1,860 feet. The first water-power electric generating plant, built in the same year, has two generators of 21,500 horse-power each, operated by impulse wheels under a head of 2,130 feet. The water is stored in a large mountain lake, impounded by an immense dam erected for that purpose. The power is transmitted 241 miles to Los Angeles, at a voltage of 150,000. This will be raised in 1923 to 220,000 volts, making it the highest voltage transmission in the world)

said that if all the power used in the country were to be produced from coal alone, there would still be enough coal to last the nation for 57,000 years; but if all of it were to be produced from petroleum alone, the oil reserves would be exhausted in nine or ten years.

A few years ago there was much agitation about the approaching exhaustion of coal. It is now realized that the country has coal enough to last a long time, though it will become progressively more expensive because it will have to be brought from greater depths and hauled greater distances. The potential water-power development of the country is calculated by the Division of Power Resources as 54,000,000 horse-power; that is, about three times as much as the present power utilization of the country, aside from the railroads and motor cars.

Superpower Districts

Ultimately, no doubt, the country will be divided into Superpower districts. One of them will embrace the New England Middle States area that we have been studying. Another will probably include

West Virginia, Kentucky, Ohio, Indiana and Michigan. This region has comparatively small water-power resources except in West Virginia, the great power reservoir of the East. Not only has West Virginia the streams, but it has reservoir sites, which are absolutely necessary for hydro-electric units; also, it has inexhaustible coal supplies, which are likewise necessary in order to operate steam-electric and hydro-electric powers in coördination. The West Virginia area will one day be the headquarters from which vast amounts of power will be transported to the industrial States north and west of the Ohio.

A Superpower district embracing Wisconsin, Minnesota, Iowa, Illinois—the upper Mississippi area—may be roughly splashed on the power map of the future. The upper Mississippi and its tributaries will produce a large power and many of the water-power sites are convenient to coal measures, so that the combination of hydro-electric and steam-electric generation will be practicable.

We have already suggested the extent and importance of the Superpower area of the

South Appalachian—the Carolinas, Georgia, Mississippi, Alabama and Tennessee.

Missouri, Arkansas, Kansas and Oklahoma may be expected to constitute another Superpower area, whose large rivers, together with extensive coal, will insure an ample capacity; but this will be chiefly a steam-electric area, with comparatively little hydro-electricity.

Montana and Idaho, North and South Dakota, and Wyoming, will likely constitute a power district; the Pacific coast States, another; and, finally, most spectacular of all these developments, it seems probable, will be the power area of the Colorado River valley.

Recently the Colorado basin and the great irrigation and hydro-electric project which is now being worked out for it have been much in the public eye. Secretary of the Interior Fall declares that six or seven great dams can be installed in the Colorado capable of producing roundly 1,000,000 horse-power each. The water will be used for both irrigation and power, easily supplying electricity for all the railroads from Wyoming to the Gulf of California, and for a great industrial development.

Superpower Will Stabilize the Coal Industry

One of the most important benefits that will derive from Superpower will be the stabilization of the coal industry. The coal-producing and marketing industry of the world is in a state bordering on chaos. That is true in Great Britain, long the chief source of coal for the maritime world and the industry of the United Kingdom. It is true of the continent of Europe, where wars and the menace of wars, treaties, coalitions, alliances, threats of invasions and occupations, are constantly in our minds and the newspaper headlines, and in large part have their real motive in the struggle for control of coal, and therefore of industrial opportunity. Such a situation is so calamitous, when considered in the light of this world's present dependence on coal and steam, that it cannot be dismissed casually. Consider for a moment what coal means. England has traditionally been the chief source of maritime coal, and in addition has exported it largely for industrial needs of other countries.

Yet, necessary as it is, the hard, unnatural labor of recovering coal from far down in the earth is a task that men more and more dislike. They revolt against its conditions;

demand more wages than industry, as now organized, can pay. Coal-mining is seasonal, miners working about 200 days in the year when they ought to work 300. The railroads find their coal cars idle at one season, while at another they cannot move the coal tendered to them. On its business side the industry is the worst organized, by common consent, in the country. If the production and movement of coal could be leveled up and down, made substantially even throughout the year, conditions would be largely improved. But the general public will not buy coal in summer and store it. The great utilities and industries will: Superpower will, and thus stabilization will be effected. Students of the whole problem regard this steadyng of the coal industry as one of the most beneficent results of Superpower in operation.

It seems probable that the greatest hydro-electric developments will ultimately be on the St. Lawrence, where from 4,000,000 to 5,000,000 horse-power can be produced for use in this country; at Niagara Falls, where probably 3,000,000 horse-power will finally be produced for American use; on the Colorado, where perhaps as much as the total of both these figures will be turned out; and, finally, in the Southern Appalachian, the Northern Pacific and Southern Pacific areas.

All over the industrial world the trend is toward the development of water power and substitution of it for coal. Countries that have coal want to be emancipated from utter dependence on so demoralized, chaotic and uncertain a source of power; so England and the United States are working out Superpower plans. Countries that have no coal—Italy, Switzerland, South America—are turning to water-power because they find that dependence on coal leaves them to choose between two horns of a dilemma; sometimes they can get no coal at any price; sometimes they can get it, but only at prices so high as to impoverish their industry. Even the River Jordan is to be harnessed and the Holy Land electrified.

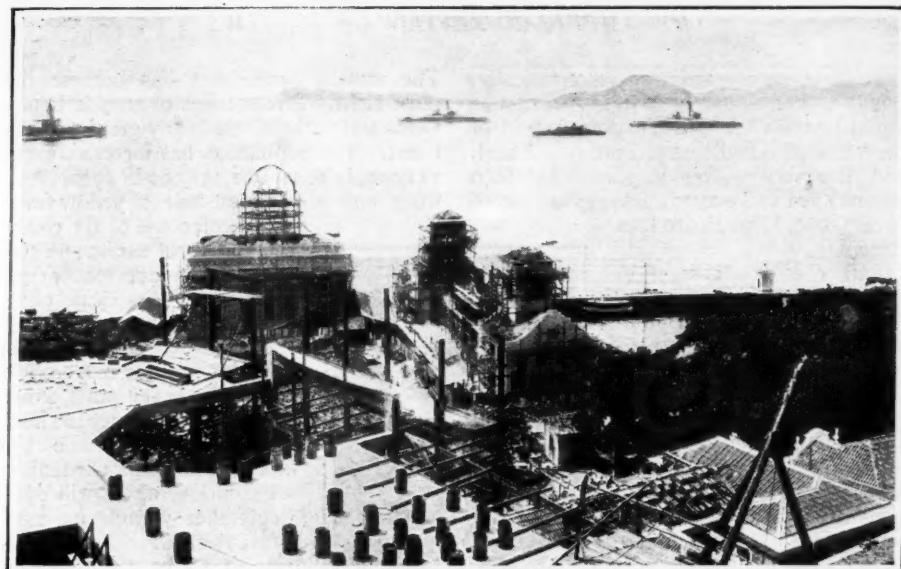
The power from falling water will flow on perpetually. The age of coal is drawing to its close; the day of coal's complete predominance as the prime mover of industry is even now in sight of its early sunset rays. Superpower is just ahead of us—of all of us—and it will mark one of the long steps in the industrial revolution that began with the factory system.

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THE SITE OF BRAZIL'S CENTENNIAL EXPOSITION, WITH SOME OF THE BUILDINGS APPROACHING COMPLETION

(The photograph was taken in June, and the exposition is to open on September 7)

BRAZIL AND ITS CENTENARY

BY ROY NASH

BRAZIL—immense, fantastic, green and brown and sere, forests of deadly silence, prairies and pack trains and the sound of a guitar, dugouts gliding down sluggish rivers, and coffee in straight rows to the far horizon; gold in the gravels, gold on the cacao stems, the golden crown of the *ipé*; mud and melancholy, pestilence and poetry. The curtain rises upon her drama at the moment when a land empire somewhat larger than the United States ceased to be regarded as a private source of pocket money for the decadent kings of Portugal.

The bay of Rio de Janeiro was full of English ships, the custom-house full to overflowing, and the beach strewn with large invoices of "stays for ladies who never heard of such armor, skates for the use of a people who are totally uninformed that water can become ice, an immense quantity of high-priced English saddles for a people who could imagine nothing more insecure." Not the waterfront of modern Rio this, but "marshy flats on the seaside which diffuse during the time of the ebb an intolerable stench."

For that was the year 1808, and the cluster of wretched villages called Rio de Janeiro had just received a consignment of European Royalty very hurriedly embarked on Sir Sidney Smith's flagship as Napoleon's thousand or so of ragged French recruits streamed into Lisbon—a somewhat shop-worn consignment, if we are to believe George Young: "The obese dullard John—the courtiers and confessors hilarious at having saved their skins—the mad queen Maria Francisca keenly realizing the situation and loudly screaming frantic protests."

Be that as it may, the arrival of King John (João VI) and the fugitive court of Portugal marked a great turning-point in the development of Brazil, for the English to whom he was indebted for his escape from the French, inspired, as his first act, a proclamation declaring all Brazilian ports open to the trade of the world. The laws prohibiting industries were likewise repealed, and printing-presses—heretofore prohibited—established along with the rest of the mechanics of the civilization of a century ago. .

Politically, as well as economically, things moved swiftly. In 1815 Brazil was raised to the rank of a kingdom as part of the "United Kingdoms of Portugal, Brazil, and Algarves." Then in 1821 King João was recalled to Portugal, leaving his son of twenty-two, Dom Pedro I, as Regent.

Father and son seem to have had a pretty clear understanding about the probable course of Brazilian politics. Most of the people felt that a big country like Brazil, endowed with enormous possibilities of development, ought not to submit any longer to the dictation of a weak little kingdom in Europe. So next year when the Prince Regent's hunting near São Paulo was interrupted by peremptory orders to return to Portugal, he publicly burnt the dispatches and declared for "*Independencia ou morte!*"

This was on September 7, 1822, at Ypiranga.

As England and the United States favored *independencia* and Portugal was in no shape to inflict *morte* upon her lusty offspring, the Empire of Brazil proclaimed five weeks later on Dom Pedro's return to Rio de Janeiro was destined to endure until the Republic was proclaimed on November 15, 1889—bloodless revolutions both.

Modern Rio

The world affords few visible marks of progress more startling than the contrast between the Rio that welcomed the court of Portugal and pilfered the stays, skates, and English saddles strewn over an unlovely beach in 1808, and the Rio which on September 7, 1922, celebrates its hundredth anniversary of complete independence from the incubus of the Portuguese court and Crown monopolies. To-day, ships come alongside an endless line of concrete docks, and electric cranes swing the cargoes of the twentieth century into warehouses ample for whatever the great world cares to send.

The marshy waterfront has become the most sightly fifteen miles of seaside boulevards and parks of which any great city can boast. The population has increased from 112,000, in 1821, to 1,158,000 in 1920. And what was once a pest-hole of yellow fever has become one of the cleanest and most sanitary cities in the world—far cleaner than most North American cities of equal size.

For six or eight months past this splendid modern Rio de Janeiro in the pride of her strength and beauty has been preparing to welcome the world to Brazil's Centennial Celebration, which will open September 7 and run until March 31, 1923. The exposition is to be not only an evidence of the country's achievements in the manifold lines of human activity, but a world's fair in which most of the nations will participate. Half a dozen world congresses have fixed upon Rio as the scene for this year's meetings, and the South American Olympic Games are on the program. Most of the buildings are located on the waterfront in the very heart of the city. Work has been going on day and night since the first of the year, and the opening day will see the fair far nearer completion than most of the world fairs of the last three decades.

A great hill adjoining the exposition grounds, the Morro do Castello, is being washed into the sea as rapidly as

North American engineers and hydraulic rams and steam shovels of gigantic dimensions can move the eight million cubic yards of earth and rock which will be dumped into the bay to bring the hill to the street level. The leveled surface will have an area of from twelve to fourteen city blocks and the land reclaimed from the bay will be approximately fifty blocks more, a portion of which will be used for additional dock facilities and for business purposes, the balance for a great park directly in front of the Monroe Palace.



THE GIFT OF CITIZENS OF THE UNITED STATES OF AMERICA TO THE UNITED STATES OF BRAZIL
(Designed by Charles Keck)

Looking seaward across this new park will stand the first United States Embassy built by our Government. It is to be of Portuguese colonial design: white stucco on brick walls, with entrance arches and window facings of native granite of mauve gray, the roof of red tile; a two-storyed building with high ceilings. The building will enclose an open courtyard, or patio, with a fountain of colored tile as the central feature. The patio is surrounded on three sides by corridors with arched openings, and on the fourth side by the main staircase. During the exposition it will be used to house the United States Government exhibits, as will a temporary building adjoining, and an outdoor pavilion for the display of moving pictures illustrative of North American industries and resources. And quite apart from the Government's participation, for which Congress appropriated \$1,000,000, is the statue of mammoth dimensions designed by Mr. Charles Keck and tendered by the citizens of the United States to their sister Republic as an enduring reminder of the real amity which has always marked the relations of the two countries.

Public-Health Progress

So much for the plans for the Centennial Celebration. It is pertinent to ask how much real progress it celebrates.

The metamorphosis of Rio de Janeiro sketched above is one indication.

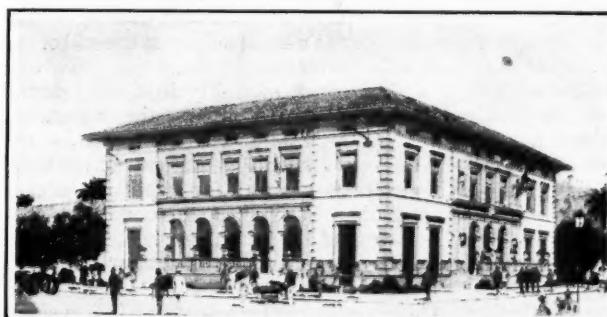
Of yet more significance is the boon of public health which is being brought to the barefooted toiler on the *fazendas* of the interior. Nothing so retarded Brazilian development during the past century as the



DOM PEDRO II, LAST EMPEROR OF BRAZIL

(From a steel engraving by the famous John Sartain, of Philadelphia, on the occasion of Dom Pedro's visit to the United States during the Centennial Exposition in 1876. He ruled as Emperor of Brazil from 1831—when only five years old—until the proclamation of a republic in 1889. Dom Pedro and his father, a son of King John VI of Portugal, presided over the destinies of Brazil during two-thirds of the century of independence)

terrible epidemics of yellow fever and smallpox which ravaged the urban populations, the malaria which is endemic along the great, sluggish watercourses, the hookworm which infests Brazil's polluted soil, and that terrible malady which has become familiar to science during the last few years under the name "Chagas' disease," from the present head of the public-health service, who has given the world of medicine its present understanding of the malady. To-day, yellow fever has been wiped out as an epidemic disease in all the Brazilian cities except Bahia, the last South American focus of infection now that Guayaquil has cleaned itself up. Smallpox has been reduced by wholesale vaccination to the dimensions of a sporadic disease appearing as isolated cases



THE UNITED STATES EMBASSY AT RIO DE JANEIRO—FROM THE ARCHITECT'S DRAWING

(During the exposition the building will be used to house the United States exhibits. Frank L. Packard is the architect)



FIGHTING MALARIA IN THE SLUGGISH WATERCOURSES OF BRAZIL

and nowhere any longer as an uncontrollable epidemic.

But more important than these victories is the campaign launched during the last five years against hookworm—more important because hookworm infects a full 100 per cent. of the barefooted toilers next the soil in all parts of Brazil except the highlands of Rio Grande do Sul. The essential problem of making her farm labor moderately productive centers in the war on these intestinal parasites. That Brazil realizes it is evident from the appropriation last year, 1921, of \$2,300,000 by the federal and state governments for the rural health work which is now going on in every state of the Republic except Piauhy, Goyaz, and Sergipe. Five years ago an eminent Brazilian physician set the ears of the country ringing by declaring: "Brazil is one vast hospital!" To-day no man may say that Brazil is not cognizant of the menace and taking thoroughgoing, scientific measures to cease to merit that terrible indictment. Malaria is beginning to be combated as yellow fever and hookworm have been, and the edict is going forth from the heads of the *Saude Pública* that the mud hut which harbors the terrible *barbeiro*, the bearer of Chagas' disease, must go the way of stagnant, mosquito-breeding waters.

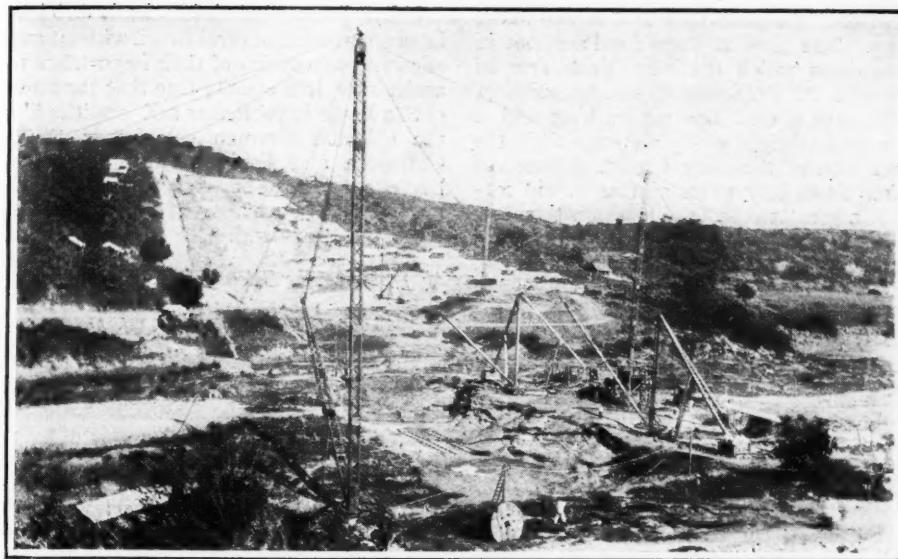
A Great Reclamation Policy

Another basic problem with which Brazil is grappling in thorough fashion is that of the *secas* of the *sertão*. No one who knows Brazil needs to be told of the terrible scourge of droughts which visits the states of Ceará, Rio Grande do Norte, Piauhy, Parahyba,

and parts of Maranhão, Pernambuco, Alagoas, and northern Bahia. Such droughts have recurred at periodic intervals for as long as man has known anything about this continent, with a loss in human life amounting all told to well over half a million souls; and cattle, sheep, goats, swine, horses, and mules by the million. There have been *secas* such as that of 1877, '78, '79, when hardly a drop of rain fell for three successive years; when the rivers dried so that wells which were frantically excavated in their beds did not yield a drop of water, and the water-holes became quagmires of festering flies swarming above dying cattle; when every green thing withered except the *joazeiro*; when every dusty trail was filled with staggering skeletons fighting their way toward the coast, trying to get poisonous roots down throats too swollen to swallow, the weaker ones dropping out to die by the roadside, parents deserting children in their panic-stricken flight, many winning to the coast only to meet smallpox at the end of the ghastly journey.

"The entire mortality in Ceará, during 1877 and 1878," writes the naturalist, Herbert H. Smith, who was sent by the New York *Herald* to investigate at the time, "was probably not far from 500,000, or more than half the population." Full 75 per cent. of the herds perished, too.

The Imperial Government was forced to begin studying the problem and the Federal Government has been studying it ever since. Like much of our own arid West, this land of the *secas*, when water does fall upon it, is extraordinarily fertile. Long-staple cotton which some experts declare the equal of the



AMERICAN ENGINEERS AT WORK ON THE GREAT DAM TO BE BUILT AT POCO DOS PAUS, IN NORTHEASTERN BRAZIL, TO STORE WATER AGAINST A YEAR OF DROUGHT

finest Egyptian, grows there almost without cultivation; the plant grows ten and twelve feet high and one species continues bearing for ten years. But even if the land were not exceedingly productive, the government was obliged to take some course which would permanently obviate the terrible misery and burden of expense of periodically moving half the population of Ceará.

The *secca* of 1915, when some 30,000 Cearenses died, 47,000 emigrated, and 3,687,000 head of stock of all sorts perished, brought the country to the point of action. The government of Dr. Epitacio Pessoa, himself a northerner from Paraíba, authorized a credit of 200,000,000 milreis (about \$50,000,000 at normal exchange) and contracted three world famous con-

struction companies, two English and one American, to build ten enormous dams and inaugurate a reclamation policy based on the practice of the Reclamation Service of the United States and the similar works of the British in India and Egypt. The work is a Federal Government job and the directing authority is the Brazilian *Inspectoria Federal de Obras Contra as Secas*.

It happens, at this particular moment of the world's history when the big funds of capital have become overcautious about launching new ventures, that this reclamation work in Brazil constitutes the biggest construction job going on anywhere in the world. Work on all ten reservoir projects, and on the port works and railroad extensions incidental, is being pros-



BRAZIL IN ITS RELATION TO THE REMAINDER OF SOUTH AMERICA

(Occupying 3,300,000 square miles, nearly half the area of the entire continent of South America, and considerably more than the area of the United States. The shaded portion locates the great irrigation project)

ecuted at the same time and is well under way. The dam at Poço dos Paus, one of five dams which the New York firm of Dwight P. Robinson & Co. is building, will have a crest 600 meters long and a maximum height of 65 meters; with the exception of the New Croton dam of the New York City water system, it will contain a greater volume of masonry than any other in the world. The dam at Orós will impound 2,500,000,000 cubic meters of water—the second largest artificial lake in the world. All ten are comparable to the finest projects executed by the U. S. Reclamation Service, building under conditions of transport and labor far more difficult.

Railroad-Building

Transportation, in a country of vast distances and scattered populations, is more basic even than education or public health; the railroad construction going on to-day is but another evidence of Brazil's vitality. The much-needed bridge over the Paraná River, which will permit the shipment of cattle over the Noroeste from Matto Grosso to the fattening pastures in western São Paulo, has been contracted with an English firm whose standing insures that it will not follow the fate of the bridge brought out from Germany a decade ago, the steel for which still lies rotting on the ground. The Central do Brazil, another Federal Government railroad, is building a bridge 644 meters long across the São Francisco River at Pirapora which will not only extend that trunk line toward its destiny down the Tocantins but will afford an easy crossing of the mighty river for the *boiadas* of northern Minas.

The State of Rio Grande do Sul is building a cut-off from Santa Anna do Livramento to Bagé which will deflect the bulk of the cattle now exported through Uruguay to the Brazilian port of Rio Grande; the Nasareth railroad in the State of Bahia is pushing north to Jequié; the through line from Rio de Janeiro to Catalão in Goyaz has nearly reached its destination; and the Sorocabana Railroad within a few months has reached the Matto Grosso boundary at Porto Tibiriça on the Paraná River, opening up a splendid new field for settlement in southwestern São Paulo. The electrification of short stretches of road in the great coffee state indicates an alert management ready to profit by the latest developments in engineering practice.

If Brazil as a whole is hopelessly deficient in wagon roads and rural Brazil without any adequate conception of their importance to agriculture, it is equally true that the State of São Paulo in particular and localities like the splendid German colonies in Santa Catharina and Espírito Santo have embarked on a road-building program which ultimately will remake the whole fabric of life in the hinterland.

The Scientific Spirit

On all sides there is evidence of an increasing tendency on the part of Brazil's responsible leaders to face reality, to discard the "made-in-Europe" concept of their country, to know and to dominate their own environment. One case in point is the recent explorations of that intrepid empire-builder, General Rondon, who carried a telegraph line across wildest Matto Grosso through obstacles unthinkable to one unacquainted with tropic jungle, exploring and mapping great areas of hitherto unknown territory, standing as the protector of the savages who thus came in contact with their civilized neighbors for the first time. Another is the work of the Instituto Butantan, where the venoms of poisonous snakes are studied and serums prepared by rigid scientific methods for distribution throughout a country where snakes happen to be more of a menace to human life than elsewhere. These are but two of many instances which might be cited.

There is a New Brazil, and in these two decades of the Twentieth Century it has moved farther in the direction of a larger and finer life for the average man than in the four hundred years that went before. If certain basic problems of a democracy, like public education, have been neglected—charge it to the Republic's youth. She has solved one great problem of a modern democracy which the United States has found well-nigh insoluble: with a population where all colors from white to black freely intermingle, Brazil knows no color problem and is torn by no race hatred. She enjoys peace within a land empire which one day will support two hundred millions as easily as it now supports thirty. She is at peace with the ten sovereignties which touch her vast boundaries, and all boundary disputes have been settled in the days of her youth by the peaceful processes of diplomacy.



THE BAND FROM THE NAVY YARD AT BROOKLYN, N. Y., PLAYING FOR AN UNSEEN AUDIENCE ESTIMATED TO NUMBER TWO HUNDRED THOUSAND—THE CONCERT BEING ARRANGED BY THE WESTINGHOUSE-RADIO CORPORATION'S STATION WJZ, AT NEWARK, N. J.

THE PROGRESS OF RADIO BROADCASTING

BY WALDEMAR KAEMPFERT

WE never recognize a public utility as such when we see it in its cradle. Samuel F. B. Morse might well have abandoned his first commercial telegraph line within a year or two after it was opened, without incurring popular displeasure. There was so much opposition to the introduction of gas that the inhabitants of our cities would probably have welcomed the speedy demolition of gasometers as a return to sanity. It was seriously questioned at one time whether there was any real need for the telephone in view of the telegraph's patent ability to meet the demand for rapid communication. And now railway, telegraph, telephone, gas, and electric light companies must see to it at their peril that the public's claim upon them for service is not disregarded.

The radio broadcasting of music, lectures, news, and stock-market reports has acquired the aspect of a public utility; and in the rapidity with which it has thus taken root in our lives it differs from all other modes of artificial communication. A decade or more had to elapse before the railroad, the telegraph, the generation and distribution of gas

and electricity were regarded as indispensable. And now, after scarcely a year, it may be seriously questioned whether the public clamor could be ignored, which would undoubtedly follow the closing of all stations that gratuitously scatter entertainment and instruction.

Consider how the public suddenly possessed itself of radio. One of the great electric manufacturing companies conceived the idea of stimulating interest in radio—and, incidentally, in its own radio devices—by spreading phonograph music and news in accordance with a fixed program published in the newspapers. The first experiments were accompanied with a timid request or two addressed to the radio audience, composed for the most part of amateurs who had made their own receiving apparatus: "Did you like it? Would you like more of it?"

The response was overwhelming. In a few weeks all the radio apparatus within a range of fifty miles had been sold. There must now be fully one million sets in daily use. One hundred stations, maintained by radio companies, newspapers, and department stores vie with one another in endeavoring to at-

tract the public ear. Overnight companies have been formed to manufacture radio instruments and accessories. For all this feverish manufacturing activity the desire to "listen in" is still unappeased, and not even a second-hand radio set is to be bought.

Who Should Pay for Broadcasting?

It was a veritable stroke of business genius —this idea of broadcasting news, baseball scores, songs, stories, stock-market reports, and lectures. But now that the novelty of it has worn off the question arises: Who is to pay for radio concerts? Suppose that the market for receiving sets within fifty miles of a station has been thoroughly exploited and that the days of large sales are over. What then? Broadcasting becomes a ruinous burden; for the maintenance of a good station, even though the artists and lecturers continue to sing and talk for nothing, entails a monthly expenditure of at least \$2000 and even \$6000. Moreover, the broadcasting company has no monopoly of sales. Its sets must compete with the sets of a hundred manufacturers who contribute not one cent to the entertainment of the public.

When we consider the possibility that broadcasting might die of hasty consumption, its real public-utility character becomes manifest. Even though it may cease to be profitable to radiate joy and information after the manner of the sun, is there not an obligation, moral if not legal, to continue the enterprise? Would it not be a blot upon the reputation of an honorable radio company to leave those who have bought its sets in the lurch? When I buy a receiver, assuredly, I assume that there must be something to which I can listen; and when the manufacturer of the apparatus publicly announces week after week that at stated hours he will tell bed-time stories to my children and delight my ears with arias from famous operas, I further assume that he will not close his station after having taken my money. The manufacturers who have discovered the merchandising powers of radio are in a position probably without a parallel in the history of industry. Unlike the early railroad and telegraph companies, they receive no direct financial return for their efforts—and yet, dare they stop?

All these contingencies were hardly foreseen when the idea of making radio do its own selling of apparatus was conceived. Although they have no immediate cause for alarm, the manufacturing companies that

maintain stations are beginning to wonder what their relations to the public really are, and this wonder is disguised in the question: Who is to pay for broadcasting? The answer must be found; for upon it depends not only continued interest in radio but the very existence of the radio industry itself.

A broadcasting station is like a lighthouse. Everyone is aware of it. If there were only some way of preventing those from profiting by its beams who have not paid for the privilege! Theoretically, the feat is not impossible. A broadcasting station might continually change its wave-length. Eavesdroppers who have listened in on one wave-length would suddenly find themselves cut off; precious minutes would be lost in trying to locate the elusive music on another wave-length. There would be an exasperating chase, crowned by momentary success, only to be followed by another period of sudden silence. This thwarting of the "deadhead" involves the invention of a receiver which would automatically adapt itself to the changing wave of the transmitter. "Scrambled wireless" this is called. But the invention of an automatic tuner, one that would unerringly and synchronously respond to the station's changing wave, must be preceded by long and expensive research conducted in engineering laboratories.

A Plan for Control and Financial Support

It may be that the engineer will thus solve the problem of collecting a just toll from the public by some such invention. In the meantime, the Radio Apparatus Section of the Associated Manufacturers of Electrical Supplies has conceived a plan that is better adapted to meet present exigencies. The Radio Apparatus Section is composed of twenty reputable manufacturers who realize that if broadcasting were to cease their enterprises would collapse overnight. The industry as a whole has involuntarily been made to play the part of a vampire simply because it was unorganized, and because there was no method of coöperating with the companies that spend money in building and maintaining broadcasting stations and that rack their ingenuity in framing programs that will be acceptable.

To keep radio alive, the twenty manufacturers who now constitute the Radio Apparatus Section have consented to levy upon themselves a tax proportionate to their sales and to contribute the proceeds to the

aintenance of a few necessary stations. Like all taxes, that which they propose to levy will be passed on to the ultimate consumer. "Bootleggers," as the conscienceless patent infringers and those who have no intention of contributing their just share to the support of broadcasting are already dubbed, will not necessarily be exterminated by this proceeding; but the fact that they are not members of the organization will speak for itself, all the more so, since the apparatus of contributors will be conspicuously marked with the seal of the Associated Manufacturers of Electrical Supplies.

The plan has far-reaching advantages. It provides not only for the financial support of broadcasting but also for broadcasting control. Too many stations have been erected in our more crowded communities. Because they are still compelled by the Government to transmit on the same wavelength, they interfere with one another. It lies in the power of these coöperating radio manufacturers to suppress unnecessary stations by withholding support.

Since the principal broadcasting company is a member of the Radio Apparatus Section of the Associated Manufacturers of Electrical Supplies, it follows that there will be no squeamishness about accepting financial support. On the other hand, by aiding the broadcasting station with money, the co-operating manufacturers acquire the right to direct the development of radio entertainment. Programs, for example, are not all that they should be, largely because they are framed by men who have little experience as impresarios. The man who directs a broadcasting station must combine the astuteness of P. T. Barnum and the good taste of a Gatti Cassaza. He must be both showman and concert manager, newspaper editor and music-hall director. A rare bird, this, and yet he must be discovered and richly paid for exercising his talents in the development of radio broadcasting. No doubt, the Radio Apparatus Section will find and engage him. His first step will be the abolition of the present system, which is dependent on artists who are willing to display their talents for nothing. He will select his singers and his lecturers not only for their conspicuous interpretive ability but also for their voice-personalities. Gradually, he will guide radio broadcasting into new channels; he will devise forms of radio entertainment not dreamed of now.

The technical aspects of radio will also be



MME. JOHANNA GADSKI, SINGING TO AN INVISIBLE AUDIENCE FROM A RADIO BROADCASTING STATION

considered by the Radio Apparatus Section. It is too early as yet to standardize transmitters and receivers, but, when the time comes, much of the waste that attends the making of unnecessary models will be eliminated.

Regulating Advertising "Lectures"

This project has the merit of recognizing that the public is more interested in sheer entertainment—music and stories—than in lectures that are too often veiled advertisements. On the other hand, the propagandist and the advertiser burn with the desire to reach the public with the aid of radio. They have inundated the manufacturing subsidiary of the American Telegraph and Telephone Company with orders for broadcasting equipment. To fill these orders would mean further clogging of an ether already congested and the erection of more interfering stations. In view of this healthy demand for broadcasting facilities, the officials of the American Telegraph and Telephone Company decided that the best solution would be the erection of a station that any one could lease by the hour at a fixed price.

An experimental station is now ready—a public service station. The political candidate, the religious fanatic, the social re-

former consumed with the desire to uplift the multitude, and the advertiser of soaps, tooth-pastes, and automobiles will undoubtedly avail himself of the facilities thus created for penetrating thousands of homes. He will receive the benefit of expert advice before he is permitted to spend his money. If past experience has demonstrated that the radio audience is not likely to be interested in his proposed effort, or if he has prepared a discourse that contravenes the law in any way, he will be asked to express himself in more acceptable terms. Dull lectures and speeches will undoubtedly call forth criticism from the audience, but it is assumed that the broadcaster himself will bear the brunt of it and not the company.

The concerts that are now the most enjoyable feature of radio programs will also be broadcasted, but at the expense of the company. For them the evening hours will be reserved. On these hours, the advertiser and the reformer may not encroach—unless, indeed, he invents a form of radio entertainment that will harmonize with the concert program and that will be entirely unobjectionable. Advertising addresses, pure publicity, will be relegated to the less desirable hours of the day. When the Government carries out the recommendations of the Hoover commission for policing the ether and for allotting wave-lengths for specific radio purposes, a happier arrangement will become feasible. The advertiser and the propagandist will then be relegated not to particular hours, but to a particular wave-length, which he may mold to suit his purpose, at any time of the day that he pleases.

Sales managers will pounce upon this opportunity with avidity. But it would never do to attempt direct selling to a radio public that wants primarily to be amused. A shameless trumpeting of manufacturing methods and of the virtues of wares will be rather wearily received by "listeners in" who have their ears pricked for lighter things. They will simply glide to another wave-length in the hope of finding there matter more to their liking. On the other hand, it is conceivable that the announcement, "Mr. Paderewski will now play the F Minor Fantasie of Chopin on the XYZ Piano, famous throughout the world for its unrivalled tone quality," will be welcomed; and a master's interpretation of a great composition will be followed with delight. The XYZ piano will be credited with at

least part of the success that will attend the experiment. In a word, if the advertiser discovers that radio enables him to enter the home, he must be more entrancing than he has ever been in type, to gain a hearing. Radio audiences are vast, but they are also as elusive as a drop of quicksilver on a glass plate. It is impossible to count the number of listeners and still more impossible to determine whether or not they are paying the slightest attention to the artist or lecturer.

Linking Wire Telephones with "Wireless"

Broadcasting for hire may answer the question, "Who is to pay the bill?" It also commands admiration for technical reasons. If the experimental station that the American Telegraph and Telephone Company is about to open in New York proves a money-making success, its counterparts will be established in every large city and connected by special telephone wires. Hence, the piano manufacturer who engages Paderewski to demonstrate the tone quality of his instrument, may radiate advertising music over the entire country simultaneously from perhaps half a dozen leased stations. Broadcasting material can be picked up anywhere and transmitted by wire to the section of the country that is to be inundated. As he plays in New York, Paderewski will be heard from the Atlantic to the Pacific Coast, from Chicago to New Orleans.

This technical linking of radio with the wire telephone is not a new conception. Prizefight reports have been directly broadcasted from the ring-side simply by connecting the radio transmitter with an ordinary telephone. Not only are the comments of the radio reporter heard, but even the yells and catcalls of the excited crowd and the gong that clangs at the beginning and ending of each round. In the future, tenors and prima donnas will sing into the telephone mouthpieces of their own homes, and the broadcasting station will do the rest. Thus it becomes possible for a lecturer at Harvard to address not only those who crowd his classroom but thousands who listen with rapt attention in half a dozen cities distant hundreds of miles from Boston. We have exchange professors in an international sense. Who knows but we may also have radio exchange professors in the future? The colleges may be welded by radio into a great, national university. And so it may be with opera and the music played by great orchestras.

This linking of wire telephony with ether-real telephony reveals the possibilities and the limitations of radio. Enthusiasts who foresee the doom of land wires, poles, and conduits will be disappointed. Although radio communication is "wireless," it is nevertheless cheaper to string wires between two isolated villages than to rely upon radio transmitters and receivers. Moreover, how could cities like New York and Chicago dispense with wire telephones? There are millions of telephone conversations every day in any large city, and to devise a radio system that would enable anyone to call one of several hundred thousand persons and to talk through the ether without interference is an engineering task of such staggering complexity that its accomplishment may be dismissed at once as a present technical impossibility. Even in a community of ten thousand inhabitants, radio cannot hope to supplant the Bell telephone.

Sending Radio Waves in One Direction Only

Moreover, there is the matter of privacy. A radio conversation is about as public as the noonday sun. Everyone can listen who has the proper electromagnetic ear. Marconi recently announced that he had in a measure overcome this objection by using what may be called a "radio searchlight." By a system of reflectors he sends a radio beam in one direction only, instead of to all points of the compass. Thus he has succeeded in covering over a distance of one hundred miles. But anyone in the path of the beam could also hear. In comparison, the ordinary wire telephone is a Sphinx for secrecy, despite all the eavesdropping that goes on at switchboards.

Armstrong and "Super-Regeneration"

More startling in its possibilities than Marconi's "radio searchlight," although its function is not that of making radio any more secret than it is at present, is Edwin H. Armstrong's invention of "super-regeneration," a name which indicates that it is an improvement over "regeneration." A few years ago Armstrong conceived the idea of using over again some of the energy detected by a receiver, and to this principle he gave the name "regeneration." If a machine-gun could collect the bullets that it has fired and discharge them over and over again, it would "regenerate" in the Armstrong sense.



EDWIN H. ARMSTRONG, INVENTOR OF "SUPER-REGENERATION"

(During the war Major Armstrong served with the American Expeditionary Forces, but he has returned to his work as one of our leading research engineers. Mr. Armstrong a few years ago invented a method of increasing the sensitiveness of the vacuum-tube detector through a regenerative or "feed-back" device; and now he comes forward with super-regeneration, which amplifies a hundred thousand times and renders obsolete the cumbersome outdoor antenna)

The effect of regeneration in a radio receiver is astounding. With a single vacuum tube it becomes possible to amplify telephone conversations that would otherwise be all but inaudible. By turning a little knob, the amount of energy thus fed back is regulated until a critical point is reached when the tube begins to howl and whistle and to obliterate all other sounds. "Super-regeneration" makes it possible to pass this critical point, so that with a single vacuum tube a signal or a spoken word too faint to be heard can be amplified one hundred thousand times. This enormous amplification enables the possessor of a super-regenerative receiving set to dispense with the antenna that now encumbers and disfigures many a roof, and to use instead a more sightly indoor loop of wire which can be disconnected and tucked away in a closet when it is not required.

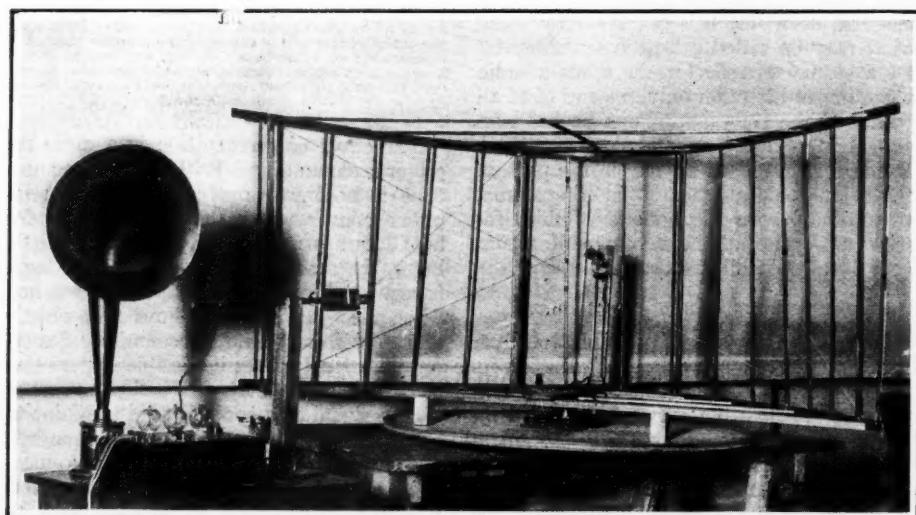
The substitution of a small loop for the outdoor antenna brings with it another

convenience. What radio engineers call "static" is in part eliminated. And by "static" is meant nature's interference with the reception of broadcasted song and bedtime story. Whenever lightning flashes between cloud and earth or between cloud and cloud, Nature sends a crashing wireless signal that overwhelms the puny efforts of the broadcasting station to make itself heard. The ether is shaken into mighty billows on which man-made ripples make no impression. Listening to a whisper near a shrieking steam siren would be the acoustic equivalent of attempting to receive from a broadcasting station when a violent electrical storm is raging. Instead of the soprano's roulades and trills, we hear a curious sputtering and hissing.

"Static" has been the bane of radio from the beginning. A kind of electrical sieve is wanted, that will filter it out and permit only the waves to pass that come from the broadcasting station. We are still far from having invented so ideal an instrument, but the use of an indoor loop with "super-regeneration" will go far to permit the reception of broadcasted entertainment

when Nature is doing her best to drown out radio concerts and lectures.

Furthermore, Armstrong's invention will enable us to use more of the ether. At present, waves measuring less than 200 meters from crest to crest (about 656 feet) cannot be successfully used for long-range broadcasting. With "super-regeneration," these short waves are added to the group that now carry music and voices to us. It so happens that "static" manifests itself less on short than on long wave-lengths, so that the super-regenerative set with its indoor loop will enable radio zealots to "listen in" even when the electrical condition of the atmosphere would render hearing impossible with antennæ. Telegraph signals usually sent on wave-lengths longer than 200 meters are likewise excluded; and what this means anyone knows who has ever heard the incisive dots and dashes of the Morse code as they cut into the voice ~~comes~~ comes from the broadcasting station. Armstrong's invention goes far toward enabling us to pick out of the ether only that which we care to hear if the broadcast station will use short wave-lengths.



MARCONI'S RADIO SEARCHLIGHT OR DIRECTIONAL SENDER

(For sending wireless waves in the direction desired, instead of broadcast. The system of reflectors, constructed in the shape of an arc, discharges the radio waves in one direction only. This scheme has possibilities for development with a view to rendering radio messages somewhat less public.)

AN ORGANIZATION OF BUSINESS WOMEN

BY MARJORIE SHULER

THE progress of American women in business was remarkably demonstrated by the convention of the National Federation of Business and Professional Women, held at Chattanooga, Tenn., from July 10 to 15. It was only four years ago that the business and professional women of the country felt their power sufficiently to form a national organization; and since that time they have built up branches in nearly every State, established a national headquarters, and founded a magazine.

There were women at the convention who are outstanding figures in the professions and others who have achieved distinction as pioneers in business, trade, and finance—women who have been elected presidents of manufacturing concerns, women directors of banks, mine owners, department-store managers, and heads of plumbing establishments. Among the groups represented, classified by occupations, were lumber dealers, radio manufacturers, the woman owner of a line of boats, government officials, lawyers, miners, florists, landscape gardeners, writers, financiers, architects, interior decorators, textile makers, food and jewelry manufacturers, designers, hotel clerks, citrus growers, dealers in real estate, teachers, civil engineers, and office workers.

Women who have found the road to success in all these lines are, through the Federation, putting their experience at the command of newcomers in business. But they are doing more than this; they are teaching their own spirit of work to the younger women, making the doing of the every-day task well seem more important than the attainment of some specific goal.

As Mrs. Lena Lake Forrest, of Detroit, Mich., the national president, said in her opening address: "Our highest aim is to teach women to do the common things of life uncommonly well."

Not the cold, hard, driving type of efficiency was set up before the delegates as a model, but the gentle, understanding

woman, who, in the words of Mrs. Forrest, "must have an eye trained to see problems and a mind trained to handle them."

"The business woman of the future," said Mrs. Forrest, "must be so trained that she will be viewed not as a problem but as an asset in the business world. Just as we stood by the men at the front, so we must stand by the girl in business, so that she is equipped to meet the world's demands upon her and never again can the economic power of women be wasted."

"We have reached a new phase of woman's progress in business. During the pioneer years, as women went into business they developed a certain hardihood which carried them along. Now younger women are entering upon these paths and finding the way well marked. These younger women must be better educated, they must be better equipped than were the pioneer women workers, if they are to hold fast that which has already been gained."

Education First, Then the Business Career!

The outstanding feature of the convention was the appeal for education. "Many of us have succeeded in business with almost no education, but we must spare the younger women the toil and waste and heartache with which we have won our way," was a sentiment repeated again and again.

The Federation set for itself the task of helping both the girl who is entering business and the woman who is already in business, to insure educational facilities for both groups and to see that the facilities are available for all.

It began by setting up what might seem to some a revolutionary standard, in requiring a high-school education or its equivalent for entrance to business colleges. It decided to undertake a nationwide campaign with business colleges and employers for the maintenance of this standard; and it determined to encourage loan funds and scholarships, not only to help young girls enter business colleges

but also to enable them to remain in high school for their preliminary education. By these loan funds, scholarships, and the friendly interest of the business women in the young girls, the Federation hopes to eliminate the practice which now prevails annually with thousands of young girls who leave grammar school to assimilate in a few months what passes for a course in stenography and bookkeeping, and then enter the business world.

It is not lack of work, it is lack of equipment, which makes girls walk the streets in search of employment, declared several women whose business it is to hire numbers of women. The business world is crowded to-day with girls who have been turned out as "graduates" when in reality they have no training for the problems before them, said these women. These are the girls who must be given training in current events, to fit them for their responsibilities as workers and citizens.

A Study of Working Conditions

Closely following in importance the action on education was the decision of the convention to undertake a nation-wide survey of conditions for women in business. The survey will be based upon occupational standards relating to environment, individual adjustments to work, the status of relationships between the employment and the home and the community, measurements of performance standards, and, finally, improved cost accounting systems, by which to determine accurately and fairly when progress has been made by groups of employers and employees in order that investments may be made secure, wages and promotions awarded, and economic wastes eliminated. There will be inspections of buildings, drainage, lighting, heat, ventilation, sanitation, safety, fire prevention, and equipment. Standards of living for all members of the family and training for the work to be done will have a prominent place in the survey.

The committee has already made some preliminary surveys along the line of objections which have been advanced against women in business. One survey was made to find the proportionate tenure of service of women, as compared with men in the same occupations. Of the lines investigated it was found that in one only, banking, did the women average as long a stay in business as men.

On the other hand, the argument that women work for pin money is offset by the result of the committee's survey showing that 85 per cent. of women investigated depend entirely upon their own earnings and frequently support dependents.

The Federation's Healthy Growth

The scope of the Federation may be understood from the fact that its treasurer handled more than \$65,000 last year and that the convention adopted a budget of \$32,000 for the coming year. The interest of the members in the organization itself was proved by the announcement that 117 new clubs have been affiliated this year, making a total of 368 now in the Federation. To organize one of the new clubs a group of business women in Boise, Idaho, traveled 150 miles by stage. Other business women had crossed the mountains in Tennessee to organize groups, and from every State there came glowing accounts of activities for club extension. Many reported owning their own clubhouses, with meeting rooms, restaurants, gymnasiums, tennis courts, and swimming pools. The New York City club, whose members have a total income of one and a half million dollars each year, is taking an entire floor in a new woman's hotel now under construction. Here there will be rooms for meetings and for accommodating out-of-town members.

The Federation is one of the group of national organizations of women making up the Joint Congressional Committee in Washington, which does its work in the name of ten million organized women. The convention approved various pieces of national legislation, but its legislative committee wisely asked the convention to continue its policy of "endorsing a few bills and following those up vigorously to the end, that the public may understand that business women do not thoughtlessly endorse legislation."

In explanation of this policy Miss Mary Stewart, of Washington, D. C., director of the junior division of the United States Employment Service and chairman of the Federation's legislative committee, said: "The Federation is constantly asked to endorse measures which are too highly specialized for the lay person to discuss intelligently. Such measures include many welfare proposals which should be left to the attention of experts and which are too controversial for us to consider."

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LEADING ARTICLES OF THE MONTH

England and the Allied Debts

IN connection with Mr. Simonds' discussion of the Balfour Note and the American case, our readers will be interested in the London *Spectator's* observations on "A New Way to Pay Old Debts," in its issue of August 5th.

The *Spectator* begins with the frank statement that it greatly dislikes the Balfour Note:

We mistrust its spirit and its style, and still more its substance. Yet it is immensely clever, judged as a piece of dialectic. Diplomatically, too, it is a masterpiece. It is polite, it is clear, and above all, it has the air of appearing to put all upholders of the opposite view in the wrong. But it is far too subtle for the very simple matter with which it deals—the meeting of a money obligation plainly and straightforwardly and without the slightest *finesse*.

When men of honor, integrity and good-feeling settle any business connected with money, the essential rule is to act and not talk—to pay and not to argue—and, above everything, not to violate the simplicity and sincerity of the transaction by talking about extraneous affairs or bringing in other people. The debtor has to pay, and the creditor to receive, and for the moment nothing else matters but the passing of the money. After the money has been paid, either party may talk to third parties or about third parties as much as he likes, but till then such talk is an impertinence. The British Note on the War Debts is a distinct violation of these principles. Though, nominally, it is a despatch from our Foreign Office to the representatives of the Allied nations—*i.e.*, our creditors, it is throughout aimed at the American Government. If not, why was the question of our indebtedness to America introduced? If we mean to pay America, whatever happens, as we most assuredly do, why talk about it to the Allies in terms clearly intended for American consumption? Men of strict honor do not hint to their creditors that they would not ask for their pound of flesh if "our good friend Mr Smith could only be induced to look at matters in the same way," and at the same time show an evident desire to be overheard by the said Mr Smith.

The *Spectator* has its own definite idea of what course should have been taken by the British Government, and it outlines that procedure as follows:

The first thing we should have done was to say to the Americans: "Here is the money we owe you. How will you have it? We will pay you in gold if you think that wise, but if, as we under-

stand, you don't want to upset the bullion market, we will pay in any other way you desire. As to other financial problems, we refuse to say anything till our debt of honor is discharged. When that is accomplished we shall have a proposal to make."

As soon as this transaction was out of the way our position would be immensely improved for tackling the whole problem on wide and also wise lines. We should, in the first place, be able to stand by the side of America on a moral and a financial equality. Both halves of the English-speaking race would be creditor nations. Both would be concerned to do their best to reestablish the world's commerce. There would be mutual confidence based on an equality of conditions.

Admittedly, such a plan for dealing with the war debts calls for a great sacrifice on England's part. Yet the *Spectator* believes that it is a sacrifice well worth making.

We shall pay America what we owe her, let off our Allies, and not collect for ourselves what is due from Germany, either as a direct reparations payment or on the Clearing House account. It sounds too virtuous, but it will be nothing of the kind. It will pay us far better than letting France, in her misery and fear and exasperation, try the crazy experiment of first killing a man and then trying to bleed him. It is good business, national as well as individual, never to ask the question: "Why should the other man get all this benefit, when I can prevent him by a word?" Ask instead: "Shall I benefit?" If the answer is "Yes," take your profit, and don't waste time by grieving that you can't prevent someone else, be his character good or bad, getting something also, and especially when that something could never have come to you.

The Manchester *Guardian*, on the other hand, admitting that the first effect of the Balfour Note may be to strengthen American determination to collect what money can be collected and leave Europe to settle her own affairs, declares that the argument of the note is fundamentally sound, and that in time its lessons will be brought home:

Europe cannot right herself without American assistance. It is beyond her resources. America cannot confine her interest in Europe to the collection of debt. It is not economically possible. Repayment of debt is only possible under conditions of active trade. If America wants active trade she must take her part in seeing that the way for it is cleared.

Has American Labor Efficiency Diminished?

A BELIEF now very widely and confidently held in this country is that the efficiency of all kinds of labor is far below what it was before the war. The increase in wages during the intervening period is commonly said to have had a demoralizing effect upon workmen. "The more you pay them the less they do," is an assertion often heard. However, as Mr. Ethelbert Stewart, Commissioner of Labor Statistics, declares in the *Monthly Labor Review* (Washington, D. C.), such statements are not supported by statistical data, but are made merely on the basis of alleged "common knowledge." When an effort is made to get at the facts of the matter, the subject is found to be an extremely complex one. Thus,

You hear it said that before the war a man would lay 1,500 bricks a day, that in Chicago you could get 2,000 bricks laid per man per day, and that now 500 and 750 are all you can get. The fact is, that any statement which does not go beyond the number of bricks laid by a man in a day does not convey any adequate information. It all depends upon whether a bricklayer was working on an 8-inch wall, a 12-inch wall, a 16-inch wall, a 20-inch wall, or a 24-inch wall, whether he was laying to a line and filling in behind his own work or whether he was laying to a line and some one else was filling in behind him, whether he was laying face brick or building a dead wall. The same man might lay 1,500 or 1,800 bricks one day and lay 400 the next day, and work harder on the 400 face bricks, pointed mortar, than he did on the 1,500 bricks. In other words, without some sort of a description of the work a thousand bricks is not the unit of the bricklayer's efficiency.

The Commissioner has made some investigations of his own, the general results of which certainly do not bear out the prevailing opinion. One of several interesting points brought out is thus expressed:

Common labor in the United States may be less efficient than it was thirty or forty years ago, but it is no longer American. In such industries as the iron and steel, coal-mining, railroad construction, brick-making, and textile mills, and a great many other of our basic industries, immigrant labor, of low-grade efficiency, was sought for and the industries in consequence overrun by races physically weak, as, for example, the Italian, untrained in any industrial occupation, as was practically all of the southwestern Europe immigration. These men are physically weak. They have neither the immediate strength nor the endurance to stand up under hard labor that the common labor of forty years ago possessed, and as a result of this inability of immigrant labor to stand the work it did not prove cheap, and machinery has largely taken the place of common labor.

Another fact that serves to vitiate sweeping statements about changes in the effi-

ciency of labor is that there are wide variations in productivity at any given time. A striking example is found in the statistics of the copper-mining industry compiled in 1918 by the Geological Survey. The survey covered more than one thousand mines.

This survey covered the labor employed in actual mining and did not take in the common labor around the mine. The range was from 38.5 to 416.1 pounds per man per day in 1916 and from 30.1 to 371.8 pounds per man per day in 1917. Fifteen and one-half per cent. of the men employed in copper mining in 1917 produced 4.4 per cent. of the total output, at the average rate of 30.1 pounds per man per day; 48.2 per cent. of the men employed in the industry produced 30.1 per cent. of the total output of copper produced by mines, at an average rate of 65.1 pounds per man per day; 6.5 per cent. of the total employees produced 5.5 per cent. of the output, at an average rate of 90.5 pounds per man per day; 15.6 per cent. of the total employees produced 17.7 per cent. of the output, at an average rate of 120.5 pounds per man per day; 7.7 per cent. of the men produced 16.5 per cent. of the output, at an average production of 227.9 pounds per day; 6.4 per cent. of the miners produced 22.5 per cent. of the output, at an average rate of 371.8 pounds per day.

It is a curious fact that 15.5 per cent. of the copper miners were producing 30.1 pounds per day, while almost exactly the same percentage, 15.6 per cent., were producing 120.5 pounds per day, or almost exactly four times as much per man per day.

In the iron and steel industry statistics of output per man from year to year show the effects of an influx of inexperienced labor during the war period and again during the industrial boom of 1919 and 1920, but it appears that "labor efficiency among skilled men is not being reduced as the wage advances." Data for the lumber industry have been analyzed in considerable detail and show, on the whole, an increase in efficiency between 1915 and 1921.

As to the material available for further investigations, the writer says:

I have been surprised at the amount of time-cost material there is in the possession of the Bureau of Labor Statistics. No particular stress has been put upon this point heretofore. It will be the policy of the bureau now to collect this information wherever it can be done with a reasonable expenditure of time. I want to call your attention to the fact that the Agricultural Department in its Office of Farm Management and Farm Economics has given us the exact time cost of one-man hours in the production of a bushel of wheat and various other farm products. From the report of the Federal Trade Commission on commercial wheat-flour milling it is possible to deduce the one-man-hour time in the production of a barrel of flour from the wheat. The Bureau of Labor Statistics also has information upon this point.

The Father of the Telephone

THE death, last month, at seventy-five of Dr. Alexander Graham Bell, inventor of the telephone, was a striking reminder that this universal instrument has a history of less than half a century, and that within one man's lifetime it had developed into a world-wide necessity for the uses of commerce and human intercourse. Especial interest attaches to statements made by Dr. Bell himself in the course of an address which was published in the *National Geographic Magazine* for March last.

In the course of that address Dr. Bell referred to the fact that both his grandfather and his father were elocutionists and correctors of defective utterance. Dr. Bell's own life work began as the teaching of speech to the deaf. In connection with this work he took up the study of the nature of the vibrations going on in the air during the utterance of speech, with the object of developing an apparatus that would enable his deaf pupils to see and recognize the forms of vibration characteristic of the various elements of speech. Thus the way was paved for the appearance of the first membrane telephone, which Dr. Bell called the ancestor of all the telephones of to-day.

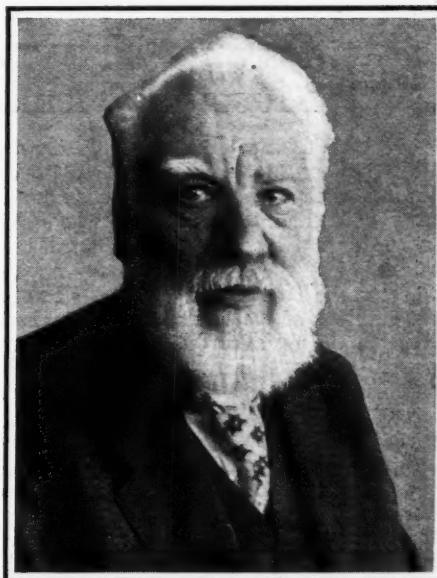
In the same address Dr. Bell brought out the interesting fact that the first foreign language spoken by telephone was the Japanese. In 1876 Dr. Bell had in his classes at Boston University a Japanese student, named Issawa, who later became the Japanese Minister of Education in Formosa, and a member of the House of Peers.

Mr. Issawa was studying with me the pronunciation of English and how the English sounds differed from the Japanese elements of speech. He knew of this curious instrument I had invented, and one day he fairly startled me with a question about it. "Mr. Bell," he said, taking the telephone up in his hand, "will this thing talk Japanese?"

He seemed much surprised when I assured him that it would talk any language, and he immediately proceeded to try it. He spoke into the transmitter while I listened at the receiver. I reported that the telephone was undoubtedly talking Japanese, but unfortunately I could neither speak nor understand the language myself.

He then asked whether he might bring two Japanese friends who were students at Harvard College. They came and soon satisfied themselves that the instrument could be used in Japan.

A great many years afterwards I was in Yokohama when the American residents there were entertaining a new Japanese minister who was



DR. ALEXANDER GRAHAM BELL

(Dr. Bell, inventor of the telephone, died at Baddeck, N.S., August 1. He was born in Edinburgh, Scotland, in 1847, and came to the United States in 1871. The original telephone patent was granted in 1876)

about to start for Washington. I attended the banquet and was about to be presented to the minister, when he came forward and said that there was no necessity for introducing him to Mr. Bell, as he knew me years and years ago, when he was a student at Harvard College. He turned out to be one of Mr. Issawa's friends who had been present when Japanese was first used over the telephone.

This was the celebrated Baron Kurino, who was Japan's representative at Washington for some years and afterwards became Premier of Japan and represented his country during the peace negotiations at Portsmouth, New Hampshire, at the conclusion of the Russo-Japanese War.

A few years ago a well-known Japanese gentleman visited the United States in a semi-official capacity to cultivate good relations between America and Japan. He gave a lecture before the National Geographic Society in Washington, and as I happened to be the President of the Society at the time, I entertained the distinguished visitor at dinner. This was Baron Kaneko, who is now, I believe, revisiting America on a similar mission.

The Baron in his after-dinner speech remarked that this was not the first time he had met Mr. Bell, for he was one of the two students from Harvard College who had spoken through the telephone in 1876.

It is rather interesting to know, not only that Japanese was the first foreign language spoken by telephone, but that the speakers were among the foremost men that Japan has produced.

The telephone has gone all over the world since

then. It has grown far beyond my knowledge. The telephone system, as we now know it, is the product of many, many minds, to whom honor should be given for the wonderful and beneficial

work it has accomplished. I can only say that I am proud and thankful of the fact that it was my crude telephone of 1874-75 that originated the great industry that we see to-day.

Mustapha Kemal Pasha of Angora

AN ARTICLE in the *Fortnightly Review* (London) for July, by Clair Price, outlines the picturesque and little-known career of Mustapha Kemal Pasha, who within the past two years has assumed the leadership of the Turkish nation. As an officer in the Turkish army for years before the outbreak of the Great War, Kemal had incurred the disfavor of Enver, and later warned his government against the machinations of Germany. After the Armistice Kemal was engaged in Asia Minor, forming a new political party, and there soon developed a bitter factional fight between him and Damad Ferid Pasha, the successor to Talaat and Enver at Constantinople. After the Greek occupation of Smyrna in May, 1919, whole provinces in Asia Minor ral-

lied to Kemal's banner, and from that day to this he has retained his hold on all that region.

He now moved his headquarters to Angora, a town of mud and malaria, which happened to be within easy communication of Constantinople both by rail and wire. Here a group of twelve leaders of his now powerful Nationalist Party drew up the National Pact and dispatched it to Ferid's Parliament in Constantinople, which adopted it on January 28, 1920, "declaring the principles therein announced to be the limit of sacrifice to which the Ottoman Parliament can consent to go in order to assure itself a just and lasting peace." The British military command in Constantinople now suppressed the Parliament by arresting and deporting to Malta as many of its Nationalist deputies as could be found. But the long effort which Kemal had made to build up a Nationalist majority in the Parliament did not come to nought. The arrival of scores of Nationalists who had fled from Constantinople on the famous night of March 16th now made it possible for Kemal to set up a solidly Nationalist Parliament at Angora. The Grand National Assembly was convened at Angora on April 23 for the sole purpose of executing the National Pact, and in the remnant of the great Empire over which Abdul Hamid had once wielded his absolute rule, Field-Marshal Mustapha Kemal Pasha had finally become master.

Some notion of Kemal's nationalistic aspirations, as well of his mental attitude towards the United States, is conveyed in an article contributed by Laurence Shaw Moore to *Asia* (New York), for April last. This writer describes Kemal as "a tall, fair man in a brown knickerbocker suit, with military collar. He wore no decorations, but carried himself with distinction." When he had laid aside his tall Nationalist cap he seemed "distinctly European, with his close-cropped, fair hair and mustache, and his steady blue-gray eyes, set wide apart."

To Mr. Moore's intimation that the outside world believed that the Turkish Nationalists did not wish peace, the Pasha protested:

"But we do wish peace. The Great National Assembly has already sent its delegates to conferences in the West and will never disregard any chance for a real peace. The Allies have cut off from us Syria, Palestine, Egypt, Mesopotamia, and would further dismember us by taking from us territory that can by no process of reasoning be proved anything but Turkish in population. The



Asia (New York)

MUSTAPHA KEMAL PASHA, A NEW TYPE OF
"TERRIBLE TURK"

Allies have disregarded the principles for which they declared they fought the great war, and they have broken the promises solemnly made at the signing of the Armistice and accepted by us in good faith. Is it just, then, to ask us to accept a treaty that takes no account of their promises and the acceptance of which means the enslavement of our people and the stifling of our national life? Even the principles of your President Wilson," he continued, "self-determination, and 'consent of the governed to be heard in determining their destiny,' were forgotten at the Peace Conference. We feel that our nation has been deceived by trusting too much to the 'new spirit of justice.'"

"May I ask," I interposed, "what terms you propose?"

"We are not asking more than we believe to be rightfully ours. We are not reaching for territory nor harboring imperialistic plans like the nations that boast their altruism, yet stretch greedy hands to every corner of the globe. Pan-Islamism, Pan-Turkism are specters conjured up by English imperialists who seek to array the world against us. We have no designs on other Moslem peoples, but only ask for them and ourselves, as well as for all other nations, the application of the principle of self-determination.

"Have you seen our National Pact?"

"I said that I had."

"You would not say that it constitutes a menace to the future peace of the world, would you? It only demands freedom of our Turkish land from the invader and control of our own destiny—just independence, that is all. It is the charter our people have the right to expect, and they have all taken the vow to defend it. There is no place for political parties in our country to-day. Perhaps, when affairs are settled, parliamentary parties will arise. But you yourself have seen how all of us, men, women and children, are sacrificing everything to save our country and rid it of the Greek invader. And let Europe be assured"—his eyes steeled and his jaw grew firm—"that we will not surrender."

Mr. Moore asked what was expected with

regard to relations with America. The Pasha replied:

"Turkey and America are both democracies. In fact, our government at present is the most democratic in the world. It is based on the absolute sovereignty of the people, and the Great National Assembly, its representative body, is the judicial, legislative and executive power. Between America and Turkey, as democracies, there should be the closest relations. We are surprised that the United States, with which we have never been at war, has delayed so long in taking up diplomatic relations with us.

"In the field of economic relations Turkey and the United States can work together to the great benefit of both. Our rich natural resources should prove attractive to American capital. We should welcome American assistance in their development because we believe that America is free from the political motives that actuate the nations of Europe in their dealings with us." The Pasha eyed me quizzically. "She does not seem to have the intention of stealing any part of our country from us."

"What about Armenia?" I inquired.

"I can not understand President Wilson's project to make a state from our eastern provinces," replied the Pasha. "Surely he would not have consented to place millions of Turks under the rule of a few thousand Armenians! That would have been far indeed from the principle of 'self-determination.' The mission of General Harbord examined the situation thoroughly and heard our story. We trusted him as the representative of your nation and confidently believed that his mission would achieve results towards a just settlement of affairs for our country. But we have heard nothing. We were buoyed up by illusions, until we found that decisions against us were always guided by prejudice and politicians, and not by justice. Now we have been thrown back on ourselves. As I have already said, we want peace. Our conditions are the minimum befitting an independent nation. So long as they are rejected, the war will continue, but the responsibility for the war and for the greater evil that the further delay of peace will entail is not ours. We are prepared for the conflict that is before us."

Putting the Bible on the Screen

MOTION pictures of biblical events are no novelty, but it appears from an article by Elizabeth Niles in the *Photodramatist* (Los Angeles) that the series of such pictures known as Sacred Films, now in the making in California, will, in certain respects, eclipse anything of the kind heretofore undertaken. The preparation of the films is supervised by a board of educators and Bible scholars, the chief director being the Rev. Harwood Huntington, Ph.D., a well-known Episcopal clergyman and writer. This gentleman is giving his entire time to the production of these pictures, and Dr. Edgar James Banks, a distinguished orientalist and archaeologist, is likewise de-

voting himself exclusively to this ambitious enterprise. Of Dr. Banks it is said that he knew exactly how to "dress Sarah's hair and to select her garments and her jewelry."

Similarly, he knew the correct costumes for the warriors, arming them with bows and arrows, with sling shots, or with clumsy wooden bludgeons with heads of bitumen. Many carry oblong shields almost as tall as a man. The data for these accoutrements were found in the ruins excavated under Dr. Banks' direction in Mesopotamia. There are number of exteriors of the ancient cities of Ur and Haran which give one an accurate picture of the architecture and city planning; in fact, Dr. Banks claims that Abraham could find his way at night about the sets at Burbank where these pictures are being filmed. The interiors are carefully designed to give an accurate idea of the domestic

life of the people of that time. The tent life of Bible days, extending as it often did over many long years, as in Abraham's life, became a distinct feature of existence. It needed some such skillful hand as the archaeologist's to give the filmed tents the semblance of reality and an historical value. Of exceeding interest to the modern school boy as well as to his teacher and parents will be the scene of the school in the city of Ur, and the close-ups of the clay tablets on which before drying are scratched the odd hieroglyphics of the Chaldeans.

One decidedly novel feature of these pictures is that the names of the actors are not to be made public. Presumably some of them will be promptly recognized, however, as it is said that several well-known stars are taking part in the productions.

Apparently the program of this undertaking is to cover the whole Bible, but thus far only a few episodes from the book of Genesis have been produced.

The first, the *Creation*, is a profound visualization of the origin of the universe and its great efficient cause. The reel of *Adam and Eve* typifies the life of nearly every human being and carries the distinct message that, although expelled from Eden, and punished, everyone finds at the end the glorious promise of redemption. The message of the reel of *Cain and Abel* is the manifold mercies of God, for instead of killing Cain, He gave him opportunity for betterment. Taken with the previous reel, it shows the increase of evil, in that Cain feels no shame but boldly tries to conceal his guilt. Naturally the punishment is worse; Adam was to till the ground with labor, but Cain is to receive no longer from the earth her strength. The next two films, *Noah and the Ark* and *the Deluge*, carry yet another

message of hope. The life of Noah is centered not so much on the flood or the building of the Ark, but on the fact that he attempted a moral leadership; he had a divine discontent with the world and made a supreme effort at reform. He is shown as the sort of man God remembers. The final scene of the gorgeous rainbow gives to people weary with a seemingly unequal contest, a new hold on life and a determination to serve this sort of God in fear and in love.

The Abraham series presents a prophet in search for the one Supreme Being, beginning with Abraham's disgust for the idols worshipped by the Chaldeans in the city of Ur and his refusal to have household gods set up in the new home to which he has brought his bride, Sarah. The quarrel with Lot is followed by the magnificent spectacle of the sacking of Sodom and the rout of the Mesopotamian kings. The keenest drama of the series lies in the story of Isaac and the banishing forever of human sacrifice from Hebrew ritual.

The author makes an interesting suggestion about these films; viz., that they will help solve the censorship problem. Shesays:

As the Sacred Films progress, it will be necessary, in order to preserve their integrity, to show facts as they are told in the Bible. To this surely no censor could object, and through it the public will learn to judge the act by the motive of the actor, and not from the spectator's personal interpretation of the act.

The last sentence is a trifle cryptic, but the author doubtless has in mind that the official regulators of morals, not daring to censor the Bible, will be forced for the sake of consistency to mitigate the severity of censorship in general.

Atoms and Systems

IN the *Holborn Review* for July "The Significance of the Electron," by the Rev. Joseph Ritson, is one of the articles most likely to appeal to the layman. The author, with Professor J. A. Thomson's work, "Outlines of Science," as a source of facts and inspiration, argues well that recent discoveries have weakened the cause of materialism considerably.

With electrons the wonder is multiplied indefinitely. An electron is more than a thousand times smaller than an atom. If a bubble of hydrogen gas be magnified to the size of the globe, each atom in the bubble would be the size of a tennis-ball. Again, if an atom were magnified to the size of St. Paul's Cathedral, each electron in the atom would be about the size of a small bullet. To put it in another way, according to the latest and finest measurements an electron of hydrogen is one part in 1845 parts of an atom. The infinite mind of the Creator alone could build a universe of such particles, no one of which is at rest, and

yet each has its part to play in the vast economy of Nature.

The wonder is further enhanced when we realize that an atom is a sort of miniature solar system in which the electrons revolve round a common center as the planets round the sun—another symbol of a vast unity. The center in this case is a nucleus of positive electricity, whereas the electrons themselves are negative electricity. But as yet we do not know the nature of either. The theory has been advanced that "the particles of positive and negative electricity are points or centers of disturbance of some kind in a universal ether, and that all the various forms of energy are, in some fundamental way, aspects of some primary entity which constitutes matter itself." But this is mere speculation, for Science has not yet decided what ether is nor even whether it exists.

When therefore the Bible speaks of a Providence that guides the steps of a good man, that takes account of the death of a sparrow, and in magnificent hyperbole numbers the very hairs of our heads, need any of these things be counted too small for the consideration of One who regulates the movements of atoms and electrons?

The Stability of the Soviets' Power

IN the *Mercure de France* for July 15, M. A. Gorovzev, former professor of law at Perm and Petrograd, writes with a frankness, courage, high moral spirit, and breadth of view that should win a world-wide hearing. He goes far to convince thoughtful readers that the Russian question is the most vital of all—and has been handled with well-nigh fatal unwise-dom.

Not the stolid passivity of the Russian peasant, nor fear of the Red Army's bayonets, upholds the universally detested régime. Its one chief support, to-day, is that very famine, from which its downfall has been so confidently expected. In the great cities, where alone an uprising could hope for success, all food is not merely "socialized" but "nationalized." Everyone save government officials is in the forlorn breadline that receives the wretched ration of two ounces of bread daily. So even if freedom could be fully assured as the reward for a single week of upheaval, struggle, confusion and fresh organization, each starving man knows that he would perish meantime.

I watched before the grill the long line of wretches who extended their hands, like beggars, to receive from a Soviet girl a quarter-pound of rice or a pitiful half-herring. I could recognize, in that miserable procession, great scholars whose names are known and honored throughout Russia, Europe, the entire world. In a prison it is impossible to obtain nourishment save from the jailers' hands . . . and Russia is one vast prison-house.

If it is desired to rescue Russia from famine—which is impossible until the Bolshevik rule ceases to exist—help should be accorded by sending bread not to remote villages on the Volga, but to the population of great cities like Moscow and Petrograd. . . . There is no reason to fear that this would confirm the power of the Bolshevik. On the contrary, it would be the surest and least costly means to accomplish, through the destruction of Bolshevism by the Russians' own hands, the reconstruction of Russia, and of Europe.

In a second section the writer reveals the larger explanation of the Soviets' long continuance, namely, the persistent and fatal errors of the European policy toward them. He imagines a farsighted French emigré at Vienna, in 1792, uttering a wise protest against promulgation of the Duke of Brunswick's manifesto, which commanded the French people to make instant and repentant submission to the principle of monarchical absolutism and to their own divinely anointed Bourbon sovereign: "Do

not fan the blaze which is perhaps about to die out of itself. Far from putting an end to that movement, you risk giving to its chiefs new grounds of support in their influence over the masses—an influence which may presently exhaust itself."

"And so now," the writer proceeds to argue, "the horror of the name of Capitalism, and everything associated with that term, is pretty much the same in Russia, since the 'social' revolution, as 'Tyranny' was for the revolutionary masses of 1792." The most emphatic warning against the peril of the cholera epidemic, in 1920, was to set up immense placards all over Russia, reading: "Cholera and Capitalism are the two most dangerous enemies of the Proletariat."

The writer nowhere repeats, or directly supports, the allegation that the costly, futile and harmful invasions by Kolchak, Denikine, and others, were financed or even instigated by bankers or governments chiefly interested in the collections of the gigantic foreign debts incurred by the Romanoffs. But

I well remember that I could not restrain my indignation when, still inside the Soviet frontier, I used to hear their manifestos and pronunciamentos, announcing, as one of the fundamental principles of the struggle against Bolshevism, the recognition of the Russian debts to foreign countries. . . . They misconceived the true state of the popular psychology, which was profoundly anti-capitalistic. . . .

The truth is, that in each European country the real "Bolshevist problem" is not a question of foreign policy, but a vital home question. Consider, for instance, how a typical English workingman faces this discussion of the Russian debts. He suffers from non-employment. He does not charge it to the abominable misgovernment of Russia to-day, to the havoc it has made of all its own people's means of production, but simply to the embargo, which his own government will lift only on condition of the payment, by a freed people, of the "old Czars'" debts to European capitalists. All this will certainly make no appeal to his own "natural antipathy to Capitalism."

So those invasions, and the ill-timed avowal of their special aim, alienated the working classes of all other countries from their present rulers, and also enabled the Petrograd autocrats to call even on their most wronged victims to enlist in the defense of the common Fatherland.

There can be no reconstruction of Russia or of Europe until the present régime ceases to exist: but it can be overthrown only by the Russians themselves, from within, not by invasion. So the governments of Europe

must wait until the autocratic group completes its work of bankrupting the whole country, before the eyes of the entire proletariat of Europe, thus presenting a memorable deterrent object-lesson. Meantime let there be no talk of debts—which a Bolshevikized Russia certainly never will nor can pay—but rather a concerted, unceasing demand for individual freedom, political liberty in Russia. That alone will arouse the sympathy of the masses both in Russia and in every other land.

In particular, there are to-day many thousands of political prisoners crowding all the Soviet jails. Though hardly to be grounded on any right under international law or usage, an appeal for their release would be infinitely more salutary than any financial demand, which only a liberated and reorganized Russia can develop any resources to meet.

Most impressive of all, from such a pen, comes the repeated appeal that we distinguish always between a great and most unfortunate nation, on the one hand, and the group of murderous conspirators who to-day stamp upon it—and upon all their own hypocritical professions—on the other. Any attempt, by Lloyd George in particular, to open economic or political relations with the oligarchy is deplored. If we feed the starving peasants for the next ten years, the rulers will only perfect meanwhile an army already a menace to all Europe.

A government created amid floods of gore, which through four long years has never ceased to proclaim its devotion to one sole ideal—to cut the throat of every bourgeois in the world—a government which has been able only to destroy everything that had life in a great country like Russia, its whole civilization, all its industries, even its agriculture, which has actually succeeded in turning the granary of Europe into a realm of famine—such a government can never be anything but an agency of War, that supreme personification of destruction and of death.

But neighborlands, like Poland and Rumania in particular, have made a grievous error in waging wars of race-hatred and conquest against Russia itself, not merely the Bolshevik dictators, who are bleeding it to death, though they cried out: "Everybody to the defense of the Fatherland!"

I know personally Russian officers, anti-revolutionists who on hearing that call argued thus: "The Soviet régime, which I hate with all my soul, is but a passing phase, while Russia, my country, is an eternal, a sacred ideal. If the Poles had made war on the Bolshevik tyranny, not only would I never have lifted a finger to defend it, but I could have brought myself to enlist in the Polish army to fight

against the butchers of Russia. But as matters now stand, on the question of defending Russia's territory, I cannot hesitate to array myself, no matter under what command, even that of the Soviets', if it comes to my country's defense against foreign invasion." Thousands of Russian officers, so reasoning, followed General Brusilov's example, and eagerly volunteered for the war against Poland.

The Polish Government needed only to announce that it waged war not against the Russian people and land, but against the Soviet government, that while taking possession of territories not essentially Polish, it stood ready to restore them the moment Russia had a real government, exercising authority not by lucky usurpation but as an honest representative of the people's will.

It is not Utopian to add that Poland in that case would never have seen Soviet troops under the walls of Warsaw, but on the contrary the war would have resolved itself into a triumphal march to Moscow, without the striking of a blow. The Russian people itself, already largely hypnotized by the Bolshevikistic terror within their own souls, would have lent them its aid to cast off the yoke of their oppressors.

It is added that a conquest like Bessarabia may be a decided source of weakness to Rumania, as its racial, political, and religious relations to Russia will keep alive a strong pro-Russian party, which in a peasant population of low intelligence makes the best of soil in which to sow the Bolshevikistic tares. In this and similar suggestions concerning "rectification" of the Polish frontier as settled at Riga, the writer asserts himself frankly as a patriotic Russian who expects yet to be proud of his country and her government; but he is no less a high-souled cosmopolitan for that. Indeed he suggests no more than a self-determining plebiscite five or ten years hence, and then only if the Soviet rule has meantime vanished.

The writer does not regard the Versailles treaty as final in any sense. Recurring to the precedent of 1815, he ventures "the opinion, which is shared furthermore by the most practical nation in the world, the United States, that the epoch through which we are now passing will behold, soon or late, its Congress of Vienna—for the definitive and righteous settlement of interstate lines and general problems for all Europe."

In a third and final section, the author offers a partially prophetic view of what must follow on the rather fruitless discussions at Genoa and The Hague. Unless a wiser policy shall effectively weaken the Soviets, the time is approaching when in Europe as in Asia the Bolshevik propaganda will take the form of overwhelming military invasion of neighborlands in which

the proletariat are believed to be largely Bolshevik at heart.

An assault on Rumania through Besarabia seems the logical first stroke, and a determined movement into the inflammable Balkan peninsula generally is far more imminent than any voluntary locking of

horns with any or all the Western Allies. In Bulgaria especially agents of Bolshevism are already active.

More encouraging for the future of Russia than anything else revealed in this article are the lucid intellect and lofty spirit of its author.

A Socialist View of Lenin

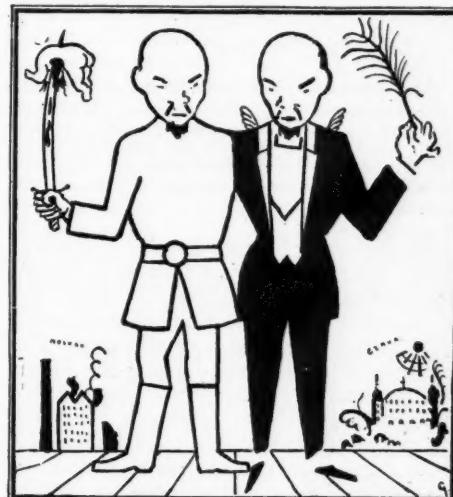
IN the *Revue Suisse* for July, M. R. Charasch, apparently a Russian Socialist of the more moderate Kerensky section, writes from personal knowledge and intimate acquaintance of "the old and indefatigable revolutionary, Vladimir Iljitsch Oulianoff, a petty noble of Simborsk:—the name Lenin being only one of the many aliases borrowed, perforce, to escape the talons of the political police." To-day he is absolute master of 100,000,000 abject mortals, and three years ago was named by one of his obsequious creatures for the "Presidency of the Soviet of the Workers and Soldiers of the World."

A notable word of praise opens the merciless analysis:

This sectary is far from undertaking anything whatsoever for his personal profit. Despite the glowing hatred that surrounds Lenin like a lake of fire, the most implacable adversaries of his system of violence, if truthful, must emphasize his salient trait: *viz.*, his moderation, his renunciation of all that men seek after. He is almost as poor a man, in the Kremlin, as when a fugitive hiding in the poorest quarters of Zurich or Geneva.

Trotzky, on the other hand, is scornfully included among the "thousand profiteers of the civil war, who all too willingly have seized, along with power, the personal profit that goes with it."

Lenin is declared to be a sincere and disinterested ascetic. "His desire is to be the prophet, precursor, creator of a new world, as well as the destroyer of the old." To this end, all means are alike justifiable. The Socialist party was torn asunder by the vilest trickery, its treasury looted by the Lenin faction. The resources of the state were no less shamelessly confiscated. A definite contract was entered into for a fixed period with a brigand chief on the Volga, and the lion's share of his plunder came into the dictator's hands. A professional criminal, often condemned, Malinovski, was made a leading government member in the Duma, and his dishonest



LENIN, THE SIAMESE TWIN (MOSCOW-GENOA)

From *Nebelspalter* (Zurich)

[The Swiss periodical printed in red the figure of Lenin at the left of the drawing, to emphasize his rôle as leader of the Russian workmen]

booty there was still assured to him, despite his conviction by a special commission. Lenin, we are told, is not conscious of immorality in using such means to his large destructive and constructive ends; he is simply un-moral. He has said most baldly: "An active central committee requires three components—talented writers, capable organizers, and clever rogues." When one of the last-named type promptly stole 100,000 rubles, Lenin merely persisted in his judgment that he was worth all he cost.

So it is, that this sincere, fanatical, despotic "Socialist" chooses to organize his new world with the help of low rascals, prison birds, swindlers, spies, sadists, whose only motto is "Make hay, 'tis our day!"

The élite of Socialism, the skilled workmen, the typographers, etc., resisted to the bitter end. The hundreds of corpses that bestrewed the street pavements or the courtyards of the torture-chambers have set the seal upon their protest against the iniquities wrought in the name of Socialism. The "Government of Laborers and Peasants" was christened in the gore of peasants and laborers.

The word "Bolshevism" means "majority," and Lenin has the gift of attaching devotedly to him the masses of the utterly ignorant and thoughtless, though at need he also makes final appeal to the minority with initiative.

An earlier word of his own is curiously prophetic: "I will never cease repeating that the worst enemies of the workers are the demagogues, because they appeal to the basest instincts of the mob, and the laboring man, with his undeveloped mind, cannot recognize as foes these pretended—or, often, well-meaning—friends."

The writer resumes:

The demagogue has been defined as one who strews right and left promises which he cannot fulfill: and we are assured that life quickly reveals that inability, and unmasks the opportunist who dazzled us with those "gilded dreams." But alas, how long a time must elapse before this dream shall vanish?

In answering his own inquiry, the writer takes the opposite view from the Russian Intellectual who elsewhere also prophesies a successful counter-revolution, but regards it as possible only in a capital city. The present writer, however, foresees the Nemesis for Lenin, and the greedy group of his immediate supporters, coming at last rather from the villages and rural communities, who have been encouraged to despoil or even slay all their bourgeois and intellectual elements, and thereafter have been deprived, through constant requisitions paid for only in worthless paper, even of the seed-corn required for a next year's harvest.

One of the most interesting glimpses in this essay is of the deadly hatred toward Bolshevism cherished by the intelligent

and comparatively moderate Socialists, typified by Jaurès, Bebel, the Belgians Vandervelde and Destree, and Kerensky's friends in Russia itself.

Socialism held once to the principle that the workingman, before he took up the reins of control, indeed as a preparation to that very end, must acquire a certain degree of culture, equip himself in knowledge and capacity. Once, too, the leaders had scruples. They refused to degrade the Socialistic ideal to the baser level of the popular consciousness, whose only demand was "Panem et Circenses!" (A square meal, and movies every day.) All this Lenin has simply scrapped, to arouse to ever greater violence the ocean of passions, until it breaks all dykes, and floods all lands. . . . Two members of Kerenski's cabinet were foully murdered in their sick-beds, while they were actually asleep! In all this, Bolshevism gives carte blanche to the blind fury of the populace, while Lenin approvingly declares: "Comrades! Workingmen! Remember that you yourselves direct the state. No one will help you unless you draw together, and take all State affairs into your own hands." (Proclamation of November 5, 1917.) He has translated Proudhon's "Private ownership is robbery" into an even cruder mob sentiment: "Just take for yourselves everything that has been stolen from you!"

A further passage should be cited to justify Professor Gorovzev's argument, that the essential aim of Bolshevism is destructive war against all democratic nations. Lenin adds:

But if to-morrow the electoral ballot is taken out of your hands, and in its stead is put a gun, or a rapid-fire cannon of the latest model, use them, regardless of the laments of sentimental women terrified at war. There exist still in this world many things that must be destroyed by fire and sword to liberate the working class.

This vivid revelation of character is the more interesting if, as would appear, certain expressions imply that the writer was himself, at first, a partisan, or dupe, of Lenin (e. g., in denying to the dictator any oratorical effectiveness, he says: "I have heard him speak repeatedly both in select committees and in public assemblages"). If this surmise as to essayist's affiliations be correct, it is the more striking and encouraging, also, that aggressive Socialist and university professor alike agree, at least, in foreseeing the destruction of the dictatorship at the hands of its duped victims.

Though this frank portraiture is extended to twenty pages, another section is promised, to be especially devoted to the quotation of the long series of Lenin's earlier utterances and repudiated pledges.



"BOLSHEVISM AND CAPITAL—NO ROOM FOR THE WORKER"

From *Notenkraker* (Amsterdam)

Jugoslavia and the Little Entente

TWO brief articles in the *Revue Suisse* for June give a clear and on the whole encouraging view of these kindred subjects from an Alpine outlook. Indeed, on the former, M. Antoine Rougier seems more optimistic than his own statements justify. It has all along been evident that Jugoslavia, far more than any neighbor, friendly or hostile, has serious internal problems which may imperil her political stability or even her racial unity.

The circumstances of Peter's coronation are unforgettable. The claim of the Kara-georgevitches to the throne is neither unquestioned nor of venerable age. In Serbia itself there is a strong republican party, and the example of two other new Slavic states is close at hand. Indeed, there is only one other throne in the Little Entente. The vanishing of gallant little Montenegro from the map of the Balkans is still resented.

Furthermore, Croato-Slavonia has long called itself a kingdom—though only one among the many hereditary domains of the Hapsburgs. Franz Josef was disposed to flatter and favor a people that might prove a welcome counterweight to the growing dominance of the Hungarian Magyars in the polyglot empire. That kingdom was almost as large as Serbia, and had just about the same population—2,500,000 each in 1900.

The Serbian holds the ritual of his orthodox Greek Church almost as part of his patriotic Credo, and hasty measures of "assimilation" seem to be heightening the barrier between him and the Croat, who gives unquestioning loyalty to Rome and his national priesthood. Zagreb (Agram) is a jealous rival of Belgrade, an ancient center of culture and racial consciousness, having even an old and flourishing university. From Croatia, naturally, comes the most determined demand for autonomy, or federalization, as against Serbian centralization.

The enthusiastic, even feverish, union of all the southern Slavs, at the downfall of the Hapsburg Empire, was formally proclaimed, from Belgrade, on December 21, 1918; but was not consummated, by the acceptance of the constitution in the convention, until June 28, 1921. This long period was full of social, economic, and political upheavals. Enthusiasm had time to cool. Jealousies sprang up, or were cleverly revived.

The prevailing desire, certainly in the Catholic lands, was—doubtless, is—for a federation of autonomous states somewhat like our own. Just before the final vote, 161 Croat delegates marched out of the convention en bloc, one section being loyal monarchists, and the other grimly republican, but united in this protest, which has continued down to the present day, against absorption by Serbia. So the apparently overwhelming affirmative vote, 223 to 35, was only 13 more than the bare majority required of the 419 delegates elected. It is persistently asserted that even this was obtained only by the grossest bribery of a Mohammedan group. Evidently the centripetal forces are serious—not wholly unlike those in Germany from '66 to '70, and later also, when chance acquaintances in Munich, Dresden, or Hanover, would ask each other, "And are you a patriot or a Prussian?"

The single legislative chamber, the "Skupstchina," thus remains in some sense a rump parliament. Furthermore, the whole question whether that body actually rules the country is a debatable constitutional problem. The King's signature is requisite to promulgate a law. His initiative can be taken, it is true, only through the cabinet; but it is not clear that a ministry unable to command a parliamentary majority must and will promptly resign. There is of course as yet no traditional usage to assure it. The constitution explicitly contains only a provision for impeachment, which recalls rather the distracted England of Strafford than that of Gladstone.

There are numerous minor provisions for local government, but all for smaller units which ignore the older and deeper cleavages. In each, too, besides the representative body, somewhat like our State legislature, there is to be an executive, sent from Belgrade, who may prove to be a royal governor, or even viceroy. The question of female suffrage is left to be decided by legislative action.

It seems certain that a relatively small minority of Serbians, or even the royalist party, only, among them, is making a determined attempt to mold the new nation of fifteen millions with perilous speed into a dynastic "Greater Serbia." The vital common interests of all will probably make

the general union of Southern Slavs a permanent and beneficent one. But that by no means makes certain the permanence of present conditions.

Altogether encouraging is the tone of the brief anonymous article on the "Little Entente." Many anxious minds shared the feeling that "the Austro-Hungarian Empire constituted an economic entity necessary to Europe, which must have been constructed had it not already existed." It must be replaced by

a more solid organization, better suited to the spirit of the new time, and which will duly regard the vital needs of the numerous nations in Central Europe. We are spectators of an evolution which proves that destruction was but the preparation for reconstruction. The feudal empire will never be restored, but the intoxication of independence does not bring forgetfulness of the common interests that make for union.

Here Czechoslovakia must be given the chief credit. It was M. Benès who founded the "Little Entente," uniting the two Slavic lands and Rumania. Three years later an understanding was reached with Great Poland and Little Austria.

It is bravely and frankly added:

To complete this task of reorganization for Central Europe there remains only reconciliation with Little Hungary, which cannot live excluded from such harmonious collaboration. She must

first renounce wholly the policy of rancor and revenge—and her internal organization does not yet seem permanently settled.

From the Swiss point of view, such an economic *rapprochement* seems satisfying and final. Indeed, the inclusion of Hungary, and even of German Austria, in the eventual group, shows that no real political union is even contemplated. Time will make clear the necessity and safety of inviting Bulgaria in also. There follow some curious figures as to recent trade. Switzerland sold in the Balkan Peninsula in January-June, 1921, 100,000 pocket- and wrist-watches, at an average of 18 francs, and the business is increasing in encouraging fashion. Only 2½ per cent., however, went to Jugoslavia, where "the importation of *articles of luxury* has not been permitted." The Levant sent large quantities of silk and silk products to Switzerland, and accepted in return, July-September 1921, 384 quintals of Swiss cheese, "which now appears for the first time in the statistics of Czechoslovakian foreign trade as an offset for Bohemian sugar." This eastern traffic is doubtless one of the rays of hope that lighten the gloomy picture of Switzerland's general economic condition, painted in the same issue of the Swiss review.

What Official Italy Thinks of the Genoa Conference

THAT the Genoa Conference was not a failure from the Italian viewpoint is brought out in an article contributed by the Royal Ambassador Paulucci de' Calboli to *Nuova Antologia* (Rome). He considers that the program of the Conference was dictated by the present critical situation of Europe, and by the stern necessities of the moment. In face of the miseries of an ephemeral peace, sadder than war itself, with its armies of millions of unemployed, both victors and vanquished felt the need of replacing Europe upon more solid foundations, of reconstructing it economically, either by the help stronger countries could give to weaker ones, or by a reawakening of mutual confidence and a purification of the zones of economic disease, especially in Central and Eastern Europe.

The Russian question, as the most difficult to solve, contained the germs of division

and discord. Thanks to the praiseworthy efforts of Italy, powerfully aided by England, a certain practical unanimity was secured. Italy brought to the examination of the Russian problem all the calmness and judgment it so urgently demanded. The question was studied from the viewpoint of justice and equity in an effort to discover what was necessary to rescue most promptly a nation on the verge of ruin.

Inspired with the pacific spirit of the Conference, the Italian delegation refused to follow the lead of those who believed that any agreement ought to be animated with an aggressive tendency, and ought to embrace formulas which would sound hostile in Russian ears. On the contrary, Italy proclaimed herself to be ready to support any enterprise calculated to revive commerce with Russia, and to further the economic and industrial reconstruction of that land.

If Italy's efforts in this direction failed of success, because of the practical difficulties which prevented the Conference from solving the Russian problem, Italians can nevertheless congratulate themselves upon the partial results attained, without forgetting that what is postponed is not abandoned.

The writer recognizes that many are disposed to underestimate the value of conferences such as that of Genoa, for it is only too easy to discover their weak points, but as capable a judge of such matters as M. Bourgeois, who has participated in so many of these international meetings, praises their great practical utility in bringing together the minds best qualified to communicate and to assimilate knowledge as to the various world problems.

Italy has reason to be proud of her work at Genoa, and in the words of her Minister Schanzer, she comes out of the Conference "universally respected and with increased international prestige." She shares the post of honor with her faithful friend, England; the bonds which unite both countries are already strong, but the writer finds that there should perhaps be a still firmer tie, a written agreement expressing this union.

The Entente which saved the civilized world cannot be conceived without France, nor without Italy, as a connecting link between France and England.

Italy's relations with her other neighbors have been strengthened by the Genoa Conference, especially those with Jugoslavia, a nationality too young not to suffer from occasional spasms of political excitement, but at the same time one possessing enough experience to recognize her vital need of the country that holds the keys of the Adriatic as Italy does. A like degree of cordiality united Italy with the other members of the Little Entente, which has an element of greatness because of the important interests it represents, and toward which both Greece and Poland seem to be slowly gravitating.

In conclusion, the writer notes that at the banquet given at the close of the Conference everything demonstrated how highly Italy was esteemed. The eloquent speech of the British Prime Minister, the vigorous address of the head of the French delegation, the adroit discourse pronounced by the German Minister of Foreign Affairs, and the hearty thanks of the representative of Soviet Russia, all combined to sound Italy's praises.

Profit-Sharing for Bank Depositors

IT is not generally known that there is such a thing as a coöperative national bank licensed by the Government and run by a labor union. A great deal of misunderstanding, too, exists among some of those who are aware that the first coöperative National Bank in America has been established for nearly two years in Cleveland, Ohio, under the leadership of a banker with an entirely new vision. Mr. Frederic C. Howe has contributed to the *Labor Age* (New York) a study of this bank and what it has to offer to the labor union and the general depositor from the credit standpoint of the borrower. Mr. Howe says:

In November, 1920, the Brotherhood of Locomotive Engineers opened the Brotherhood of Locomotive Engineers' Coöperative National Bank in Cleveland, Ohio. A national bank charter was secured because of certain moral advantages which a national bank charter seemed to confer. The capital stock was placed at \$1,000,000, and in addition a surplus of \$100,000 was paid in. All of the stock is owned by the Brotherhood as an organization or by the individual members. The directors of the bank are the grand officers of the organization,

although trained bankers have been employed to manage the bank. . . . It refused to join the Clearing House Association because the rules of the association would have bound the bank to abide by "gentlemen's agreements," which would have prohibited most of the things which the bank desired to do. The bank does all of its clearing through the Federal Reserve System, of which it is a member. . . . The provisions in the bank's by-laws, limiting the dividends to 10 per cent., the use of the word "coöperative" in the title of the bank, and the avowed purpose of distributing surplus earnings to the depositors, was a challenge to our entire banking system. . . .

Despite the misgivings of many, the bank grew. As a matter of fact, it has grown probably more rapidly than any national or state bank in the country. Each month has added a million dollars to its resources. At the end of February, 1922, its total working assets amounted to \$14,000,000.

Mr. Howe tells his readers that existing banks and banking associations have started propaganda for legislation designed to place obstacles, if not barriers, in the way of establishing similar banks in other communities. He even quotes Mr. Crissinger, the Comptroller of the Currency, as stating before the Ohio Bankers' Association that

there was no need "for any coöperative banks, labor banks or farmer banks. What we need in this country are fewer banks and larger banks." Mr. Howe, nevertheless, believes that we need more banks or different kinds of banks to meet the needs of small businesses and industries rapidly becoming undesirable borrowers as grouped banks concentrate in ever larger combinations.

Mr. Howe looks forward hopefully to the future of the labor coöperative bank in aiding the building of homes and factories, buying land, steamships, and so forth, starting "stores, bakeries, breweries, and printing establishments." Especially is it emphasized that small credit agencies are used in Italy, Czechoslovakia and Germany, joining together in central coöperative banks in the large cities. The Farmer-Labor movement under this sort of organization might easily become an accomplished fact. Coöperative marketing and production is the liaison between the two groups, which can produce and distribute at either end through the coöperative organization, financed by the coöperative bank, which will centralize in the towns and cities the credit power of small rural or village credit unions. Perhaps ultimately coöperative transportation will complete the circuit.

Mrs. Gertrude Mathews Shelby contributes a very interesting study of the Cleveland institution in the *New York World* on June 25, outlining the amusing maneuvers of the banking agencies when confronted by this new element, and the managerial adroitness of the new coöperative institution. Prof. W. F. McCaleb, who is manager of the bank, is given credit for originating the profit-sharing plan for depositors, which really seems to be the key to the new bank's great success. His radical banking departure consists in giving depositors a share in the earnings, on the theory that the depositor is a partner of the stockholders in proportion to the amount he keeps in the bank, the time the money remains there, and the risk accounted taken with every dollar. Mrs. Shelby says:

Four per cent. was offered on savings, and, in addition, interest was to be paid on funds left in the bank thirty days, instead of dating, as customary, from quarterly or semi-annual interest periods. Established banks seem to have been more alarmed at the promise to write up interest monthly than by the more fundamental reforms

instituted. Against this interest plan they made protest, but to no avail.

When, at the end of the first two months, the assets of the Coöperative had more than doubled, local bankers were seriously disturbed. The Clearing House Association (Cleveland) found it advisable to raise the interest rate on savings to meet the Coöperative's 4 per cent. The fight was on.

Nevertheless, at the end of twelve months the Coöperative had ten millions of assets. Repeated Federal inspection revealed no fault in management and no losses. Investments had proved judicious, expenses kept low. On their first year of operation they showed excellent earnings. After satisfying all reserves, a 6 per cent. dividend was declared on stock, the first savings dividend ever paid in this country; 1 per cent. was also credited to every depositor's account, and there still remained some \$40,000.

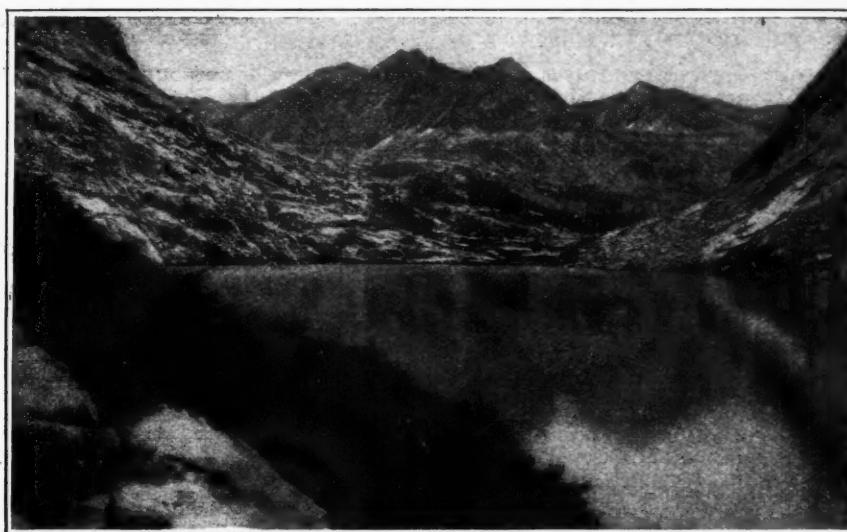
Besides the Cleveland bank of the railroad Brotherhood and a branch (formerly known as the Nottingham Savings and Banking Company) in a working people's section of Cleveland, the Engineers' Coöperative Bank has a subsidiary called the People's Bank at Hammond, Ind., and "labor unions have succeeded in establishing four other banks—the Mount Vernon Savings Bank in Washington, D. C., belonging to the machinists; the Trade Union Savings of Seattle; the Finnish Mutual Savings of Superior, Wis.; the Amalgamated Clothing Workers' Institution in Chicago."

Similar institutions are planned for St. Louis, Birmingham, Philadelphia, Pittsburgh, Cincinnati, Dallas, and other cities farther West.

At San Bernardino, Cal., the workers propose to purchase control of an existing bank, and are said to have the required funds in sight. The Maintenance of Way Brotherhood projects such a bank for the city of Detroit.

While few of these have adopted the profit-sharing principles of the Cleveland Coöperative Bank, the idea of placing depositors on a partnership footing with stockholders, and distributing a share of profits made on use of their money to the depositors, had already been widely discussed in banking circles.

The National City Bank, of New York, in its monthly survey of business conditions, issued August 1, says that establishment of such banks is welcome because it will disabuse critics of capital and banking. "If they encourage the practice of thrift, teach the value of private wealth to the community, and help to inculcate respect for property rights, as may be expected, bankers generally will rejoice in the progress of the movement."



Photographed by Francis P. Farquhar

ONE OF THE ALPINE LAKES IN THE ROOSEVELT-SEQUOIA NATIONAL PARK
(Altitude 10,500 feet)

The Roosevelt-Sequoia National Park

OUR glorious western mountain region seems to be coming into its own. Two beautifully illustrated articles, "Features of the Proposed Roosevelt-Sequoia National Park," by Francis P. Farquhar, and "The Forests of the Roosevelt-Sequoia National Park," by Ansel F. Hall, Park Naturalist of the Yosemite National Park, are included in a recent issue of *Natural History*, published by the American Museum of Natural History of New York City, describing the advances which have been made in protecting that wonderful country, and displaying effectively its beauties by reproductions of beautiful photographs. Says Mr. Farquhar:

When the Sequoia National Park was established in 1890 to preserve the giant trees of the Sierra Nevada in California, very little was known of the high mountain region immediately to the eastward. A few mountaineers and explorers had penetrated into canons of the King's and Kern rivers, and had crossed the principal passes; geologists had hastily inspected the country; and prospectors had tried the rocks for metals and had found them wanting. For the most part the land was given over to the sheep-herders to be used and ruined without let or hindrance and without fee or tax.

Then two things happened; the people of the San Joaquin Valley, the great central valley of California, whose lands were watered by the streams from the mountains, discovered that the safety of the natural storage at the sources was being threat-

ened by the sheep; and about the same time the public became aware that hidden in these mountains was some of the finest scenery in the United States. In an article in the *Century Magazine* for November, 1891, John Muir called attention to this splendid region and spoke of the King's River as "a rival of Yosemite." He urged that park boundaries be extended to embrace it, and concluded: "Let our law-givers then make haste before it is too late to set apart this surpassingly glorious region for the recreation and well-being of humanity, and all the world will rise up and call them blessed."

Then the army officers began to take a hand. As everybody knows they are apt to be highly intelligent men as a class, and are not prone to be afraid of offending sheep-owners—or anybody else. "Sent to guard the new park from depredations, they reported both the damage done by the sheep and the impression made by the majestic scenery." It is interesting to turn back thirty years and read what Captain Dorst, of the Fourth Cavalry, had to say in his report to the Secretary of the Interior for the year 1891:

There has been some talk of further extending the park to the eastward to the main divide of the Sierra Nevada Range. . . . But aside from the objects of interest, the prosperity of the population living in the valley between the Sierra Nevada and Coast depends upon the preservation of the timber and brushwood in the mountains. . . . Sheep destroy much of this brush and herders often

set fire to it in the fall to destroy it, as the ground will furnish a good crop of grass next season. Knowing how much the welfare of a large population depends upon this matter, I am in sympathy with any plan that will preserve the mountainous country in its natural state.

In 1893 Captain James Parker, who was Captain Dorst's successor, reported concerning the General Grant and Sequoia National Parks, which, he said, were well suited for game preserves. Says Mr. Farquhar:

In recent years a determined effort has been made to persuade Congress to take action establishing this greater Sequoia National Park, culminating in the proposal to make it a memorial to the late President Roosevelt. One by one the objections have been overcome until at last a way seems almost clear for final success. The sheepmen have been driven from the scene; the cattlemen have become satisfied that they are not seriously affected; the lumbermen find that they have no holdings within the proposed boundaries; the irrigationists see a positive advantage in the additional security of their water supply; the miners have abandoned hope of ever finding anything to mine; the Forest Service and the National Park Service have come to an agreement as to the proper boundaries; and finally the water-power companies have declared themselves out of the field for the reason that they can find no

sites that they consider of economic value for this generation at least.

The scenery offered by the eleven hundred miles of the proposed park is uniformly magnificent. In the writer's estimation it is unsurpassed in the United States for grandeur of form and delicacy of texture. It lacks the brilliant colored rocks of the Yellowstone Cañon or the cañons of Utah, but the many deep blue alpine lakes with the blue sky overhead, and myriads of bright flowers all about, give color enough to satisfy any mortal.

The great cañons of the Kaweah, the Kern and the Middle South Forks, of the King's; the varied peaks of the Great Western Divide; the rounded heights of the Monarch Divide; the extraordinary domes of Moro Rock and Tehipite; and above all the Sierra crest, extending for miles along the eastern border of the park, present a panorama of indescribable majesty.

Here is a literally vast field for the study and systematic development of the natural sciences, and, incidentally, for the contemplation of some of the noblest works of nature.

The Farmer's Persecuted Friends

A RECENT interesting article in the *Contemporary Review*, of London, might well have been published, almost *verbatim*, in an American magazine, so nearly similar appear to be the conditions in both countries. The writer (S. L. Ben-susen) begins his discussion with the remark that "the farmer is surrounded by friends, most of whom he does not know, and some of whom he persecutes. A little extension of the theory suggests that some of the few enemies of the farmer are merely friends grown too numerous. Nature holds the scales evenly, we disturb them for selfish ends, and are apt to complain of results at once unpleasant and unforeseen."

It seems worth while commenting, at the outset, that many of the curious duplications between the popular names of American birds and mammals, with somewhat similar forms in Great Britain or the continent, evidently are due to the fact that many of the early settlers of America were Englishmen or Frenchmen. Many of these men were uneducated, especially in the natural sciences, and had only the common, local (home) names for birds and mammals they

first saw in this land. Because they were utterly untrained, they gave to these creatures the names of the forms in the old countries, which seemed nearly analogous to them. But this crude observation resulted in the bestowal of the same names upon forms which differed widely.

For example, the American meadow lark is a totally different bird from the English lark, though the obvious differences were not remarked by the Englishmen who first came here, and gave our bird the name it still bears. Many similar and rather absurd instances might easily be cited; notably the "prairie dog," which, of course, isn't a "dog," at all, but a member of the *rat* family. For that particular misnomer we probably have to thank the French settlers who so named "Prairie du Chien," because the locality was full of "prairie 'dogs,'" whose outward resemblance to a dog happened to be that they had four legs and a *tail*, which latter they wagged vigorously.

So is it with our pretty little sparrow-hawk, thus named by the English settlers, because of some fancied resemblance to the English bird of the same name. But our

bird isn't a "hawk" at all, to begin with; but a *falcon*; nor does it attack sparrows, except very occasionally. It preys chiefly upon grasshoppers, crickets, and the like.

The mole [remarks the *Contemporary* writer] is the victim of a senseless persecution. The gardener who finds his well-tended lawns or flower-bed in a state of mild eruption, may be pardoned if he takes steps to abate the nuisance, but on the heavy-land farm the mole is entitled to every consideration. He lives upon worms and insects, the cock-chafers, bug and the wire worm being esteemed especial luxuries. The track that he throws up is really a benefit to the heavy soil, for it consists of earth that has been loosened and aerated. When the harrows have smoothed down the mole hills the little mound makers have improved the texture of the land. . . .

The toad is another victim of senseless animosity. . . . Here we have the case of a very prolific animal, as a visit to any pond in the early spring will testify, but it has a very high rate of mortality. The toad is not ugly and venomous, it will not live for centuries or years or even weeks "under a cold stone," it does no harm to man directly or indirectly—or the contrary it serves him well. Slugs and snails are its favorite diet; in greenhouse or conservatory it earns the gardener's thanks. There is, be it admitted, a slight penchant for bees, and the presence of a toad under the alighting board of a hive is to be deprecated, but, if the intruder be carried away to a shady garden bed and left to his own devices, he will atone for his indiscretion. Shut up in the conservatory, he will do still better. . . .

The barn owl [we have a species of the same name, perhaps the same bird] has been known to take a score of rats a day, and it must be remembered that the rat is a night feeder, his hours being from about an hour after sunset until midnight. In the dark, a man cannot see the rat that scents and avoids him; but the rat can neither see nor hear the owl, which descends upon him with silent wings and carries death in its grip, for the owl's feather-shafts are rounded and the owl's claws in gripping pierce the heart. After a time the rat grows poison-shy and trap-shy, and the spring and summer diet on preserves is endless. There are eggs and young birds, there is ample residue of the maize fed to the hens in the coops and young pheasants in the "rides." In woods over which never a hawk dares hover, in which every owl, Barn, Wood, Long-Eared, Short-Eared, and the rest is shot on sight, where bats and weasels dare not to be seen, the rat thrives. The pace of productivity beats the game-keeper every time, and unless the farmer encourages owls—no difficult task—it will beat him, too. The rat may serve a purpose, though in the present state of our knowledge it is an unmitigated evil; in any event, its numbers and its habits constitute a national menace.

Almost every word of which—barring a few concerning species not found in America—is literally true of the United States; and especially so as regards the owl family, of whom the average farmer is, nevertheless, a sworn enemy. And the same as to *all* hawks. Didn't he see a hawk steal one of his chickens the other day? What *kind* of a hawk? Why, a chicken-hawk, of course.

All hawks look alike to him! But there is a tremendous and easily ascertained difference between hawks, though the farmer doesn't know it, and won't trouble himself to find out. The Cooper's and the sharp-shinned hawks are inveterate chicken thieves, while the common red-shouldered, red-tailed, marsh, broad-winged, and rough-legged hawks are largely beneficial—greatly so to the farmer, though he doesn't know it, and kills all of them on sight as "chicken" hawks.

He knows the difference between a cow and a deer, because he knows that if he shoots somebody's cow, he is likely to pay a heavy fine, or go to jail. He also knows the difference between a man and a wolf—though it might be a bit difficult for him to define just what that difference is *morally* between the wolf and some of man's human associates. He has been told repeatedly that he can learn the outward differences between harmful and beneficial hawks and owls, by applying to the Department of Agriculture, at Washington, which is eager to tell him, in plain language. As Mr. Bensusan says:

The balance of Nature has been upset by long years of indiscriminate destruction of helpful birds, and for a time our national life trembled in a balance of another kind. . . . The farmer's friends are the friends, too, of the urban population, and when the fly-catcher's nest is robbed in the heart of the garden, or when some foolish person kills titmice [warblers] or nightjars [whippoorwills] the damage done must be met in the long run by the consumer, so that even the man living in the heart of a city has a definite interest in improved conditions.

What we have to realize is that we live under laws that must be obeyed. . . . The insect life of this country is infinitely varied and widely destructive; our system of imports, beneficial though it is, carries with it enormous risks. . . . The output of our farms is far less than it might and should be. . . . The home producer finds his crops ravaged by insects that exist in numbers passing outside the realm of estimates. To aid him in a struggle against hopeless odds come various forms of wild life, chiefly birds, working all hours of the day and night, the best of them asking nothing, or at most a little fruit, for payment. He rewards them by permitting the destruction of any species suspected of being harmful to game [which he likes to kill, for "sport"], by allowing the nests of insect-eating kinds to be rifled.

All of which may be said as truly of America as it is of England. Agriculturally, we are vastly bigger and more productive than Great Britain, but there may come a time (and that sooner than we expect) when we shall wish we had a small part of what we are now so heedlessly wasting.

News of Nature's World

IN the field of the natural sciences, a recent development of real importance is the favorable attitude adopted by the city authorities of New York toward the American Museum of Natural History. The report of President Henry Fairfield Osborn, of the Museum, as digested by the magazine, *Science* (issue of July 14), mentions this favorable attitude and cites explicitly:

The decision to begin the construction of additional wings which have been urgently needed for more than fifteen years, but which because of the war and the high price of building materials following, it was found impracticable to start before the current year. At a meeting of the Board of Estimate and Apportionment, held on December 26, 1921, the sum of \$1,500,000 was unanimously voted to erect the southeast wing on Central Park West and the southeast court building adjacent thereto as planned in 1875. In providing these additional halls, the city administration is liberally supporting the public educational activities of the museums' work.

Excepting only the public schools themselves, there is hardly a public institution in the city which so well serves the educational needs of the school-children, as does this great museum.

During the past year the museum, which serves alike the schools of the five boroughs, reached 1,500,000 school children [says *Science*]. The number of schools reached outside the museum was 477 in all the boroughs, and the number of scholars was 1,247,515. . . . On a single day as many as 2500 boys and girls may be found in the library preparing for their examinations. For this purpose adequate space must be provided. Still greater care is necessary for the large classes coming for a day from outlying sections of the city in New York and New Jersey, which also find the museum in increasing numbers. To care properly for this enormous number of school children, a special school service building has been planned in the southwest court, to be devoted exclusively to their use.

On April 21, 1922, the Board of Estimate and Apportionment of the City of New York unanimously appropriated \$570,000 for the construction and equipment of the School Service building of the American Museum of Natural History. This action of the city authorities opens a new period in the history of the museum's relation to the schools and is significant appreciation of what the museum is doing in bringing nature to the boys and girls of the city. . . . Sunday opening, which was one of the most warmly debated questions in the early history of the museum, leading to the resignation of some of our strict Sabbatarians, during the year totaled 327,888, showing that the museum is sought for wholesome and inspiring education during the Sunday afternoon hours by constantly increasing numbers. The Sunday attendance during January, 1922, alone, has been 51,962.

Exterminating Insects

"The Possibilities of Exterminating Insects," which is the title of an interesting article in the July issue of the *Scientific Monthly*, by Dr. E. P. Fleet, State Entomologist of New York, seems sufficiently remote, nor altogether desirable, so far as some insects are concerned; though there are many others which the world would be better off without.

The Gypsy Moth, the Brown Tail Moth, the Elm Leaf Beetle, the Leopard Moth and the recently introduced Japanese Beetle are somewhat familiar examples in the eastern United States [remarks Dr. Felt], "while the South has become altogether too familiar with Boll Weevil, the Pink Boll Worm, and very lately the Mexican Bean Beetle. There is, in addition, the recently introduced European Corn Borer, now beyond any possibility of extermination so far as this hemisphere is concerned, though at one time it must have been within the possibilities. . . .

Earliest attempts to exterminate insects were based largely on some plan designed to catch and kill the last remaining insect, preferably within a year or two, and certainly within a few years. Some have advocated reducing the infected territory to practically desert conditions in such a manner as to make all insect life, at least, impossible. This latter is undoubtedly possible in the case of very restricted infestations, and may be justified if the insect is an exceedingly destructive or dangerous one.

On the other hand, and in the wider field of zoology, Dr. Felt remarks that some remarkable results have been obtained by the operation of what he aptly calls "the irresponsible urge of self-interest." He mentions, explicitly the tragic fate of the passenger pigeon, evidently extinct, though it once existed in multitudinous numbers, through the operation of such influences as the shipment of three car-loads a day for forty days from a single small town in Michigan. Though familiar with large wooded regions in the States of Ohio, Pennsylvania, Michigan, New York and Massachusetts, during the past forty-odd years, the writer (during all these years an observer of birds and mammals) has never seen a passenger pigeon; yet in 1857 the sagacious and farseeing Senate of the State of Ohio declared that the bird "needed no protection . . . and no ordinary destruction can lessen them." In his remarkable book, "Our Vanishing Wild Life" (1913), Dr. William T. Hornaday devotes an entire chapter (pp. 17-33) to "The Next Candi-

dates for Oblivion," and enumerates twenty-three species of North American birds as "threatened with early extermination," mostly through deliberate and human persecution. In the light of the foregoing facts, Dr. Fleet's phrase, "the irresponsible urge of self-interest" becomes significant.

Are we not assuming [asks Dr. Fleet] that because insects are apparently innumerable, systematic general measures continued over a series of years are foredoomed to failure? It by no means follows that immense numbers indicate impossibility of control or extermination. The stimulus of a deadly peril is sometimes necessary to demonstrate the practicability. This occurred in the case of yellow fever, and while the insect was not exterminated, it was soon found possible greatly to reduce the breeding of the "day mosquito," and by a combination of mosquito control measures and preventing insects from access to infection, the disease was actually eradicated. The deadly peril of plague on the Pacific Slope drove home the lesson that safety lay in rat eradication, and this latter could be accomplished only by a simultaneous attack upon the rat, its food supply and habitation. . . . The systematic destruction of prairie dogs has resulted in over four million acres of "public lands" being freed from these pests.

Where the Eel Begins

This interesting subject receives the dignity of a full column of space in a recent issue of a New York daily newspaper (the *Times* of June 23, 1922, Editorial Section). It is well not to take too seriously these allusions to subjects of the natural sciences in newspapers, whose besetting sin is to strain to collect and present "news" of what is merely bizarre or unusual, with little regard for scientific truth; but this particular matter seems to have been presented with enough alleged circumstance, to be worthy of some attention. The article referred to deals with the rather mysterious matter of the geographical origin of the eel, a subject which has puzzled the naturalists for many years. It is indicated that this matter has been receiving careful consideration recently from Dr. Johs. Schmidt, director of the Carlsberg Laboratory, of Copenhagen, and a party of scientists, who for seven months have been searching the seas for some definite trace of the birthplace of the eel, which has long been believed to originate in the sea. The article continues:

Since at least 350 B. C., scientists have been trying to find the eel's birthplace, and by tracking down the route found taken by young eels, Dr. Schmidt placed the breeding grounds between the Bermudas and the Leeward Islands, where the sea reaches a depth of more than a mile. Here the

remarkable discovery was made that the European species and the American, whose difference is so slight as to be almost negligible, and absolutely so as to the layman, breed side by side and eventually start for their later homes, thousands of miles away, but that neither variety ever goes to the other's fresh-water grounds.

The marvel is, to scientists, according to Dr. H. F. Moore, Deputy Commissioner of the United States Bureau of Fisheries, that of the millions of young making the trips, instances of discovery of the European species in American waters, and vice versa, have been exceedingly rare, and there is no interbreeding between the two. The European species, Dr. Schmidt found, deposit their eggs and breed in a section to the south and east of the Bermudas, while the other breeds to the south and west of the islands.

As to Nature News

Apropos of the recent publication, by a New York newspaper, of a full column of matter devoted to the recent scientific investigation as to the traces of the development of the common eel, there are other similarly interesting signs of the times. The morning *World*, of New York City, has recently been finding room, on its very editorial page, for a miniature department, called "News Outside the Door," for which it is making space daily next to "The Weather Forecast." The matter is strictly "unscientific"—merely gossip of nature in and near the city, one might call it; but the most significant fact about it is that a busy metropolitan daily paper finds room (and time) to devote to such ideas. "J. O. S.", who signs it, apparently is no more than a field naturalist, who has been keeping his eyes open, and knows instinctively what people are interested in—sometimes when they didn't know themselves. Similarly, the Chicago *Evening Post* has recently been including, on its editorial page, short characterizations of American birds. Surely the editor would not give such valuable space to such matter unless people read it.

The Monkey-Eating Eagle

A new book of nature study, prepared for the children of the Philippines, describes the most powerful of the birds on the islands, the monkey-eating eagle. This bird is characterized by the authors as "handsome and cruel, large and strong and fearless." It is peculiar to the Philippines.

Switzerland's Economic Plight

IN a paper of extraordinary directness, force and brevity, the leading article in the *Swiss Review* for June, Colonel P. Pfund, former Chief Instructor in Military Engineering, gives a clear picture of his country's share in the world's suffering.

The supreme calamity is the reduction of income from loss of foreign visitors, from 500,000,000 francs to 80,000,000. Exports have fallen from 3,250,000,000 francs in 1920 to 1,750,000,000 in 1921, with a balance of trade against it by reason of half a billion larger imports. Three hundred thousand francs a day are being spent in governmental allowances to the unemployed.

"It is evident that, at this rate, we shall in due time reach the bottom of the well, despite our fine national fortune of forty-two billion."

The next sentence, "The exchange is not the only cause of stagnation in our foreign relations," must refer to conditions in neighbor lands, since Switzerland, alone of all countries, actually holds U. S. currency at a discount—though only of 3 per cent.

Those in government employ (which includes the railroads), providers of food, speculators generally, are prosperous, and so contented, though they, too, should see, in the proposal of a confiscatory levy on wealth, a near future in which they will share the downfall of the bourgeoisie generally.

The farmers are voluntarily lowering the war prices, and are ready for union with the bourgeois generally to resist the socialistic terror. There are open advocates of Bolshevism, and a much larger section of Socialists "wish to socialize, to put under state control, regulate everything, leaving no private individual initiative." Though a minority, as in all truly democratic states, they have had successes through better organization.

With soldierly frankness, errors are confessed which have been committed on the author's own side: notably, unfair treatment of skilled workers on piece work, which has driven them into the labor unions to fight for high day's wages and short hours for all. Many of the workingmen can yet be regained from the radicals, if only to act in a special party of their own for common interests. "Materialism, the race for wealth, egotism, have invaded all classes.

Preaching will not elevate the general moral level. A hungry man has no ears. We require strong measures to restore normal conditions."

The author's first proposal is an issue of 250,000,000 francs in bank notes, which will not endanger the present financial equilibrium. Forty per cent. of this sum is to pay off the state debt, and permit the distribution of the present burdensome taxation over a long series of years. The remainder is to be devoted equally to subsidizing the factories now idle, and to such public works, as the improvement of the channels in the Rhine and Rhone.

Proposal II is "the opening of the frontier"—not to free immigration, of which there is quite too much already, but to food-stuffs, raw materials, etc., without the present vexatious taxes and restrictions.

Third comes the repeal of the eight-hour law, which, as many workmen already see, benefits no one, restricts personal liberty, and cripples production.

Fourthly, the railroads and post-offices are to be leased to private enterprise, which will make them more economical, cheaper, and better, and also half the government officials are to be dismissed, while the pay of the survivors should be increased 20 per cent. Many, however, can be transferred, with ten days' special training, to the charge of equipment or to direct labor in the new public works. This last suggestion surely seems unworthy of a life-long trainer of engineers. There is one characteristic exception to this sweeping reduction:

The personnel of the military department should be reduced as well as the others; but the resultant savings should be returned to the military budget, so as to assure the means for raising the army to the utmost efficiency. The army is the people's highest school, the bulwark of government, the safeguard of national independence. We shall have more urgent need of it than is generally believed.

The soldierly writer, it is clear, does not lean trustingly on the special pledge upon which Switzerland consented to enter the League of Nations, namely, that no soldier even of the friendliest flag should ever set foot upon her soil, and no Swiss contingent should be asked to leave their own territory for any purpose whatever.

In closing, the writer welcomes the most destructive criticism, well content if a tithe

of his proposals shall meet with final acceptance.

Let the men of enlightenment, the savants, the professors, come down into the arena, as several of them have done already. The instant for action has arrived. Let us get busy!

Though not here emphasized in the closing words, the edge of the trenchant appeal is the warning of an approaching death struggle between Bolshevik, or at least,

radical socialism—and democracy. It is clearly indicated, also, that large sections of the bourgeoisie are already financially ruined, hopeless and, where still capable of doing so, immigrating from the country, while their places are filled twice over by the most undesirable of immigrants. We are given no statistics to pass judgment upon the accuracy of these gloomy views, and, indeed, a slight improvement at the time of writing is cautiously conceded.

A "Natural" Means of Relieving High Blood Pressure

WHEN all is going well with us, the blood, which carries all the materials used in the growth, repair and work of the body from the digestive organs to all the working cells, presses on the walls of the blood vessels with a force which gives us no sensations either pleasant or painful. In other words, blood pressure is then *normal* and does not affect us subjectively any more than a healthy heart or liver does. But, unhappily, there are times when all is not well with the blood pressure. It may be too high or too low, and then we are sick or ailing.

Disordered blood pressure is a source of discomfort and sometimes of danger to invalids, and a very worrying matter to physicians. There is, therefore, considerable rejoicing in the medical profession on account of experiments published by Orr and Innes in the April number of the *British Journal of Experimental Pathology*. These workers found that they could lower blood pressure by the simple expedient of giving their subjects large quantities of water. They worked on normal persons, on patients with a too high blood pressure but with kidneys in good order, and on patients with a high blood pressure and badly diseased kidneys. In all of these a large intake of fluid lowered blood pressure, though in subjects with damaged kidneys the pressure rose at first and then fell. This meant that the kidneys were unable to pass out water fast enough to prevent an initial rise, caused by the increased volume of blood, but that as soon as a good deal of water had been got rid of the pressure fell for the same reasons that it did in the other cases.

These are definite results, and there is hope that they may furnish a means for relieving the discomforts and damaging effects of high blood pressure. Their explanation is, so far, not final. We do not know certainly the first cause of high blood pressure. We know that the very small arteries are narrowed when the pressure is above normal, and we think that the narrowing is caused by some substance or substances made by things going wrong in the body's protein factory. We are familiar with a number of drugs and chemical compounds, which, if taken into the body, cause the minute arteries to contract, and so raise blood pressure. And we also know substances of the opposite nature which will cause the arterioles to dilate and the blood pressure to fall. These two classes of substances are called, respectively, *pressor* and *depressor* substances. A high blood pressure is generally regarded as caused by the presence of pressor substances in the blood.

There is reason to think that these pressor substances are made by some perversion in the behavior of proteins in the body—when the proteins taken in through our food and the proteins of our own bodies are not broken down and built up by the steps they ought to pass through.

The pressor substances are probably parts of protein molecules which should not collect in the blood at all, because either the molecule should not split in a way to produce these parts—the pressors—or if these are made they should be used immediately in rebuilding other protein molecules, or they should be combined to form some harmless substance. This failure of protein breaking down and building up to

go on in the right way may occur at one or several points, but if it occurs anywhere pressor substances may be absorbed into the blood and cause the small arteries to constrict before the pressors can be got rid of. If pressor substances are being made all the time there will be a constant high blood pressure.

Orr and Innes suppose that three factors may have combined to produce the fall of blood pressure that followed copious water drinking. First, there was a flushing out of pressor substances, and a lessening of their action took place because of their dilution in the blood. Second, a speeding up of a too sluggish protein transformation was caused by increase of water in the tissues—chemical changes are hastened by the presence of water—and a more normal trans-

formation began, a transformation which did not include the making of pressor substances. Third, dilution of the contents of the large intestine lessened the activity of bacteria which ordinarily split up undigested protein there, producing, among the clearance products, pressors which are readily absorbed into the blood from the intestinal contents.

The tentative explanation which must at present be given to these results does not lessen their practical importance, or diminish the force of the moral to be drawn from them—a moral which points once again to the imperative need of water for the work going on in the animal body—a need especially urgent for all whose overabundant diet contains a superfluity of meats and other foods rich in proteins.

More Revelations at Pompeii

THE task of uncovering the buried city of Pompeii, begun in 1748, is still in progress, and each year brings interesting discoveries. Even during the late war this great archaeological undertaking went on. In the *Illustrated London News*, Professor Federico Halbherr, of the Italian Department of Antiquities, describes the excavations of the last few years, which have been particularly fruitful. He says:

Their extraordinary results are due chiefly to the new, more careful, and more scientific method inaugurated by the Director of the National Museum of Naples, Professor Spinazzola, in the exploration of the old Vesuvian cities. In accordance with this system, the ground is now dug, not by means of pits and abrupt trenches, as formerly, but—as archaeologists are accustomed to do in prehistoric mounds—by horizontal strata, descending only by degrees towards the ancient level, so that it becomes possible to catch and fix all the remains in their relative depth and position, and to preserve or restore all those parts of buildings, upper and lower, which have escaped total destruction.

The new items of information acquired in this way are of the highest importance for a knowledge of Pompeian architecture—especially that of the private house. Some old ideas about its form and construction—that, for instance, which regarded the Greco-Oscan habitation as a closed building, like Oriental dwellings, with no openings, or only a few, towards the street—must now be completely abandoned. On the contrary, the Pompeian house was provided with plenty of windows, grouped in pairs, or three and four together, in the manner of the Gothic *biforae*, *triforae* and *quadriforae*, and—like those at Ostia, but even more so—with projecting balconies, balustrades and galleries, permitting its inhabitants to enjoy watching the movement of

people outside. The aspect of the buildings on the principal streets—as pointed out by Dr. Auriemma, to whom we owe, for the most part, our information about the latest discoveries—must have been not very different from that which strikes our eyes in the gayest and liveliest Campanian towns of to-day. The doors, and more especially the shops and taverns, were surmounted by awnings or penthouses supported by wooden beams and covered with common tiles, serving to protect customers and passengers from rain and sun. In the course of the excavations, the carbonised beams have been replaced by iron bars, the fallen or broken tiles laid again or restored to their position, and the odd painted signs of the shop entrances protected by glass.

Heretofore it has been necessary to go to the National Museum, in Naples, to see the great bulk of the small objects which illustrate the daily life of Pompeii, but the new plan, inaugurated by Professor Spinazzola, is to leave such things, as far as possible, in their original places. Another new feature of the present operations is that casts are now taken of all sorts of decayed objects, and not merely of human and animal bodies and skeletons. Even the trunks of trees and the roots of plants that once grew in the gardens have thus been restored. We read:

It is known that a complete mould is frequently found formed around the different objects and bodies by the fine white ashes and *lapilli* consolidated by water, while the enclosed matter itself became disintegrated in process of time. By pouring liquid gypsum into the hollow interior of such moulds, every one of them can be preserved intact, and most interesting casts have been lately

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taken, such as that of a folding-door of quite monumental size, still retaining its strong decorative large-headed nails, which was immediately replaced on its hinges. This was the door of a large mansion, certainly belonging to one of the wealthiest and most refined families in the town. Its rooms were found adorned with splendid pictures of the fourth Pompeian style, and we can still admire on the walls of one of them, serving as the *triclinium*, or dining-room, the chief episodes of the Trojan War, executed by a painter of uncommon skill. The four pillared wings of its central court and garden were decorated with statues and shaded by trellises of vines and climbing plants, and an elegant double-storied shrine, or *edicula*, rose in front of one of them with a spring of fresh water at its foot. The garden itself, like some others, has been revived with plants of the same kind as those which were burnt there 1843 years ago, since their roots could be recognized by means of casts.

The magnitude of the recent excavations is indicated by the statement that a quarter of a mile of a certain street has just been laid bare, with almost all its houses, on both sides. Among these houses two are of special interest on account of their decorations and contents.

One was the home and studio of a certain Cerialis, an engraver and merchant of precious stones, in which some of the jewels and hard stones carved by him were found still there, together with the tools of the craft. On the walls of its rooms are to be seen some pictures relating to the myth of Iphigenia and to the legend of Orestes and Pylades. The other house can be presented as a veritable marvel in the art of archaeological digging and restoration. The rooms of its upper floor have been kept upright by accurate works of consolidation, and the ceilings themselves patiently reconstructed by putting together and fixing in place thousands of pieces. In one of them a crystal lamp is still fixed in the wall; the wick only is wanting! The *triclinium* contains the benches and the dining-table, still provided with the vessels for daily use; and a hole in the pavement shows that the dishes were brought up from the kitchen by a lift. Pompeian people did not lack comfort.

New shops and bars, or *thermapolia*, were discovered in great numbers, with curious fresco-paintings, both in their interiors and also at their entrances, generally alluding to the articles and goods sold by the proprietors, or to their industries,



A ROMAN ELECTION APPEAL 1843 YEARS OLD: NAMES OF CANDIDATES PAINTED IN RED ON A WALL AT POMPEII

(The names are those of Cnaeus Helvius Sabinus, a candidate for the office of *Ædile*; and Caius Gavius Rufus, for that of *Duumvir*)

but sometimes also of a different kind, decorative or allegorical, such as the fine picture of a marine Venus in a boat, drawn by elephants, or that of Romulus bearing a trophy of war.

Other wall-paintings in the excavated houses show hunting scenes, or repeat with different variations the common topics of the Trojan War, which form also the subject of some admirable stuccoes in a rich mansion. Here we see, figured with masterly skill in round relief, the combat between Hector and Achilles in presence of the anxious Greek and Trojan warriors, and Priam with Hecuba watching the conflict with terror from the Scaean tower; and, again, the rescue of the body of Hector, and other episodes of the fall of Troy. Old Homer remained, until the fall of Graeco-Roman society, an inexhaustible source of its poetry and art.

Popular inscriptions of various content—love-addresses and compliments, proverbs, flashes of wit, and, not seldom, rude and vulgar sallies—traced by the *dealbatores*, or bill-painters, or scratched by loafers and street-boys, were brought to light on the walls of the more frequented places. Amongst theater-advertisements, there is one announcing that on a certain day a great performance would be given in the Amphitheater of the town, and another inviting the Pompeians to a gladiatorial combat in that of Puteoli, the modern Pozzuoli. Of peculiar importance for the history of the city and of its political customs are the newly discovered election appeals, written in fine, high red letters, found in great numbers on the same walls, chiefly near or in front of the bars. We reproduce here a photograph of one of the most legible of them, that recommending the election of a citizen named Cnaeus Helvius Sabinus to the office of *Ædile*; and of another, a certain Caius Gavius Rufus, to that of *Duumvir*. In some of the latest examples discovered, we find the candidates promising to their electors splendid gladiatorial games, exciting beast-combats, or *venationes*, and dramatic performances in the theaters.

THE NEW BOOKS

Economics for the Practical Man

EVENTS of the war and post-war period have conclusively demonstrated the wide-spread need for a fuller understanding of fundamental economic laws. To fill this need a reading course in economics¹ has been prepared under the direction of George E. Roberts, a vice-president of the National City Bank of New York, one of the most distinguished economists and financial authorities of the country, and well known to our readers through his frequent contributions to this REVIEW. It will be warmly received both by business men, to whom it is particularly addressed, and also by general students of affairs.

Through addresses, magazine articles, and his admirable monthly letter for the National City Bank, Mr. Roberts has already accomplished an extraordinary work in educating the general public in sound economic thinking. These writings are, however, in the nature of analyses of current events in the light of economic fundamentals. The purpose of the new work is to present underlying economic principles directly and in such manner that the general reader can grasp them easily and learn to apply them for himself in analyzing specific problems of business and of public affairs.

The course is being conducted by the American Chamber of Economics, Inc., 70 Fifth Avenue, New York, of whose advisory committee Mr. Roberts is chairman. Associated with the organization as members of a co-operating board are: James B. Forgan, chairman of the board, First National Bank, Chicago; Henry S. Pritchett, president of the Carnegie Foundation, New York, and formerly president of the Massachusetts Institute of Technology; Frank A. Vanderlip; Samuel Insull, president of the Commonwealth Edison Company, Chicago; Joseph H. Defrees, former president of the United States Chamber of Commerce; and E. J. Nally, president of the Radio Corporation of America.

The basis of the work, which is entitled "Economics for Executives," is a series of twenty-four readings dealing with the following topics of wide current interest:

1. Economics and the Individual.
2. The Primary Industries.
3. Manufacturing.
4. Railroad Transportation.
5. Railroad Regulation.
6. Marketing.
7. Capital as a Factor in Production.
8. Enterprise and Business Organization.
9. Financing of Production.
10. The Organizing Functions of Prices.
11. The Determination of Prices.
12. Money and the Monetary System.
13. Banking and the Credit System.
14. Foreign Exchange and Foreign Trade.
15. The General Movement of Prices.
16. Panics, Crises, and Depressions.
17. Profits and their Uses.

18. Interest and the Rate of Interest.
19. Rent—Land Values.
20. Wages.
21. Labor Problems and the Labor Movement.
22. Government Regulation.
23. Taxation.
24. Economic Progress.

As editor of the series, Mr. Roberts assumes complete responsibility for the form and contents of the volumes, and for all conclusions and opinions expressed. The simplicity of the style and the practical nature of the treatment reflect the touch of the editor's pen on every page.

In the first volume, which bears the editor's name as author, economics is defined as the science upon which business is based; for this reason a knowledge of economics constitutes an important qualification for successful commercial and industrial leadership. The author points out that in the modern age of business complexity, it is not enough merely to know a particular business field, for all fields are inseparably bound together, and all are subject to economic forces which must themselves be comprehended.

Other considerations of broader significance for business men are pointed out in the following suggestive paragraphs:

"Government is having more and more to do with business. The problem of taxation has become of the utmost significance. The power to tax is seen to include practically the power to destroy. The development of an equitable system of taxation, designed to raise necessary revenues with the minimum of interference with the wealth-producing powers of the community, is a matter of vital consequence, and requires a thorough knowledge of economic relationships.

"Proposals for legislation affecting the standard of value, the monetary and banking systems, trade relations, industrial conditions, and other matters of vital concern are constantly pending. It is highly important that business men shall be able to comprehend their scope and probable effects, not only for guidance in their own affairs, but in order that they may have informed opinions and be able to exert wholesome influence in the adoption of public policies."

A distinctive feature of the readings is their brevity. Each is a separate volume, of pocket size, and of such length that it can be read within an hour. Accompanying each reading is a supplementary booklet which emphasizes the practical significance of the subject discussed; a set of study suggestions which raises specific questions; a summary for review purposes; and a problem which the reader is asked to answer, if he chooses, and to return for criticism and comment. In most cases the problems consist of actual examples of fallacious economic thinking and the reader is asked to point out and refute the fallacy, in his own words and in his own way. By this method practice is afforded, under expert guidance, in applying economic principles and in analyzing actual economic situations.

¹ Study Texts in Economics, edited by George E. Roberts, American Chamber of Economics, New York City.

Pictures of a Post-Bellum World

Reconstruction in France. By William Mac-
Donald. Macmillan. 349 pp.

For the first time we have a definite, concrete account of just what the French Government has done in the restoration of the invaded regions. The writing of this book involved a thorough study of the policies and plans of the government in respect to transport, industry, mining, farming and town-planning. Possibly it is not generally recognized that this national enterprise is unexampled in history. From the very first year of the war, France assumed toward her citizens an obligation to make good the damage wrought by invasion. She has never wavered in this obligation. Reconstruction has thus far been carried forward under serious financial handicaps and even in the face of hostile criticism. Never before has any nation even attempted such a task.

Germany in Travail. By Otto Manthe-Zorn.
Boston: Marshall Jones Company. 139 pp.

An unbiased attempt, made during the summer and fall of 1920, to analyze the German national spirit. The author, who is Professor of German at Amherst College, devoted the greater part of his investigation to the situation in Berlin and Munich "because these cities are the most active and dominating centers of Germany, and because they are most opposed to one another in purpose and method." As a teacher of German literature, the author was interested in the discovery that throughout Germany there has been developed a strong consciousness of the relation of the drama to personal and national character. The drama leagues that have been organized are made up of the "calm, progressive element among the Democrats and Majority Socialists, which is comparatively free from the general political confusion."

Poland Reborn. By Roy Devereux. E. P. Dutton & Company. 256 pp. Maps and ill.

Any account of conditions in post-war Poland involves the discussion of cognate problems—the relation of Upper Silesia to Poland, the race question, Danzig as a center of Polish aspirations and Poland's place in the scheme of a modern European Continent. These topics, as well as many of a more narrowly Polish character, are all set forth in Mrs. Devereux's book. Only the first chapter is devoted to the remote past. The rest of the volume deals altogether with developments since 1914.

The New Latin America. By J. Warshaw.
Thomas Y. Crowell Company. 415 pp. Ill.

Not only does Professor Warshaw describe political and social conditions in the countries to the south of us; he takes occasion in his opening chapter to expose and refute certain misconceptions regarding Latin America which have been more or less prevalent in the United States. To show, for example, how baseless is the notion that the Latin Americans are an effete race, the author cites several recent instances of enterprise and vigor, of which any modern nation might well be proud. When the Government of Argentina decided to build its new Palace of Congress an entire section of the city had to be remodeled, and Professor Warshaw states that within ninety days five hundred business houses and private residences had been torn down, whole streets had been altered and an extensive square had been laid out, graded and beautified into a fitting site. A similar work was the construction of the Avenida do Rio Branco, in Rio de Janeiro. The photographs reproduced in this volume go far to confirm the statements in the text concerning progressive movements in Latin-American countries.

American History and Biography

The Trans-Mississippi West: 1803-1853. By Cardinal Goodwin. D. Appleton and Company. 528 pp. With maps.

In this volume Professor Goodwin treats of the half-century of American expansion that began with the Louisiana Purchase, in 1803. The State Historical Societies are now actively at work on the local history of communities west of the Mississippi, but very little of what they have thus far published has become accessible to the larger public, even of those States where their work has been most effective. Professor Goodwin was happy in the conception of a plan to make available in a single volume a general account of the acquisition and settlement of the region west of the Mississippi. He has covered the ground in a somewhat journalistic fashion, bringing out the picturesque and colorful phases of the story and at the same time holding the reader's attention to the economic and political aspects of westward expansion. To the younger generation of readers, growing up in the trans-Mississippi States, such a book as this is a real boon.

Who's Who in America: 1922-1923. Edited by Albert Nelson Marquis. Chicago: A. N. Marquis & Company. Vol. XII. 3520 pp.

The twelfth biennial edition of this invaluable reference work contains over 24,000 sketches of living Americans, 3300 of which now appear for the first time. This portly volume of 3500 pages is unapproached by any other publication in any language as a compendium of "live" biographical material. The first edition of "Who's Who" in 1899 contained only 8600 biographies. During the intervening twenty-three years it appears that there have been published 42,769 biographical sketches, all told, but whenever the subject of the sketch dies, that sketch is omitted from all ensuing editions of "Who's Who." One who, for any reason, desires to know the key facts in the careers of well-known Americans for the past quarter of a century, will be almost certain to find them in this unique book. It should, of course, be borne in mind that "Who's Who" is purely a record of fact. One will look in vain throughout its pages for a single sentence of eulogy or of criticism.

Our Foreign-Born Citizens. By Annie E. S. Beard. Thomas Y. Crowell Co. 288 pp. Ill.

There has not recently appeared in this country a more interesting book of collected biography than this account of "Our Foreign-Born Citizens: What They Have Done for America." The plan of the book—briefly to set forth, as typical examples, the life stories of American citizens of foreign birth who have become eminent here by their contributions to our civilization—is something new in the book-publishing field, and has been admirably worked out. The "Americanism" of most of these men has been so long recognized and taken for granted that in some cases the reader is almost tempted to dispute the allegation of foreign birth. Dr. Bell, inventor of the telephone, who died only the other day; Andrew Carnegie, another American of Scottish antecedents; James J. Hill, the railroad builder; Samuel S. McClure, the publisher, and Augustus Saint-Gaudens, the sculptor, are names that suggest the ideals of modern America as completely as almost any list of similar length that could be made. Striking incidents in the lives of these

and a score of other Americans who came to us from overseas make up a volume of exceptional interest.

The Negro in Our History. By Carter Godwin Woodson. Washington, D. C.: The Associated Publishers Inc. 393 pp.

A summary treatment of the relation of the Negro to American history, which also shows briefly how the Negro himself has been influenced by contact with the White Race. The anti-slavery movement in its various phases and the place held by the Negro in American politics for many decades naturally occupy a large part of the volume.

A Social History of the American Negro. By Benjamin Brawley. Macmillan. 420 pp.

The point of view in this book is distinctly the social rather than the political. Much is made of the social progress of the Negro, both before and since the Civil War. A chapter is devoted to the history of the Republic of Liberia.

Studies of the Labor Problem

The Industrial Code. By W. Jett Lauck and Claude S. Watts. Funk & Wagnalls Company. 571 pp.

Developments in the American labor situation during the past summer render this volume peculiarly timely. The authors offer, as a proposal looking to permanent industrial peace, the principles embodied in the Kenyon Bill, dealing with the coal problem. These conclusions are preceded by a general survey of the post-war industrial situation and a review of war-time developments in industrial relations. This survey and review are essential to any clear understanding of the present situation. The book is valuable, not merely as a formulation of the authors' views on the various problems in the labor field, but also for important documentary material in the form of appendixes.

Labor and Democracy. By William L. Huggins. Macmillan. 213 pp.

The author of this little book is presiding judge of the Kansas Court of Industrial Relations, and himself drafted the law under which that court operates. In his discussion of the relations be-

tween the government and modern industry he points out what he considers some of the dangers to democratic institutions inherent in the present labor movement. He gives an analysis of the Kansas Industrial Court Law, but treats it as an experiment in government and not as a solution of the problem.

Employers' Associations in the United States. By Clarence E. Bonnett. Macmillan. 594 pp.

Detailed descriptions of trade unions and all forms of labor organizations have been in print for many years, but it seems that in the English-speaking world at least there has not, up to the present time, been published any comprehensive account of employers' associations. In this volume, by Professor Bonnett, we have a well-ordered study of associations in the iron and steel, building and printing industries, of associations in the fields of propaganda, legislation and litigation, and of one local organization—the Associated Employers of Indianapolis—which the author rightly regards as of national significance. Professor Bonnett has made a serious and altogether worthy contribution to the literature of industrial conflict in America.

